

SEPT. 27, 1958

INDEX

• 175
• 150
• 125
• 100
• 75
• 50
• 25
• 0

BUSINESS WEEK

A MCGRAW-HILL PUBLICATION

FIFTY CENTS

At Newport—peak moment
for a gold platers' sport

In a program of 34
McGraw-Hill magazines . . .
BUSINESS WEEK reports on how
business plans and organizes its
modernization

*Modernize now
for growth and profits*

McGraw-Hill

E B POWER
UNIVERSITY MICROFILMS
313 N 1 ST
ANN ARBOR MICH 48106-1500
2-C

REPORT FROM MCGRAW-HILL TO AMERICA'S BUSINESS EXECUTIVES



How to make wood "grow" white

AS LONG AS TREES GROW, men will bleach wood pulp to make white paper. And whenever best results are called for, hydrogen peroxide will play a big part in the bleaching job.

To keep pace with industry's increasing need for hydrogen peroxide—not only as a bleach, but as a purifier, rocket propellant, and convenient source of oxygen for chemi-

cal reactions—Shell Chemical built a large new plant to manufacture peroxide for every use.

Shell Chemical continues to serve industry by providing an economical and dependable source of such vital chemicals as hydrogen peroxide.

Shell Chemical Corporation

Chemical Partner of Industry and Agriculture

NEW YORK



GENERAL BUSINESS

	Page
BUSINESS OUTLOOK	35
WASHINGTON OUTLOOK	55
INTERNATIONAL OUTLOOK	129
PERSONAL BUSINESS	149
THE TREND	184
FIGURES OF THE WEEK	2
CHARTS OF THE WEEK	152
READERS REPORT	5

EMPLOYERS BEGIN TO TALK TOUGH. The auto makers' firm stand against the UAW cinches a new trend in bargaining.....	39
HOT ISSUES ON CALIFORNIA BALLOT. The taxpayer may put himself over the barrel in the November election.....	41
THE MEN ADAMS LEAVES BEHIND. Who will be who on the White House staff.....	42
BROKER FEELS BIG BOARD LASH. Why Exchange cracked down on Garvin, Bantel for loan deals on government bonds.....	45
YACHTING'S FESTIVAL AT NEWPORT. Who won the America's Cup means less than the fact that the race is held—a symbol of yachting at its peak...	46
COLLAPSE IN TIN. Break in the tin market raises doubts about international commodity agreements.....	50
BANKERS DEFEAT OUSTER OF MUTUALS. But ABA vows to press fight for tax equality among banks.....	50
IN BUSINESS. News about tinplate price boost, gain in net working capital, GM's new prices, Buick's fast start, halting of production at O. A. Sutton.....	52

SPECIAL REPORT

WHY INDUSTRY MODERNIZES—
AND HOW IT DOES THE JOB

The Most Intensive Kind of Competition. It will take efficient plant and good strategy to survive in the market that's ahead.....	76
From Research, Ideas That Turn Equipment into Junk. New tools and techniques that will cut costs are coming out of research.....	82
What U. S. Steel Gets for the Billions It Spends.....	88
It's a War on Costs for De Laval.....	90
Diana Stores Finds Its Answer in a Technique for Distribution.....	96
How to Find the Moment When Modernizing Pays Best. New approaches help management get the answers to this tough problem.....	100
How Modern Is American Industry? McGraw-Hill's new survey finds it would cost industry \$95-billion to junk the equipment that's obsolete.....	121

THE DEPARTMENTS

BUSINESS ABROAD:

In Business Abroad.....	155
U. S. TV Taps Worldwide Market.....	156
Quemoy Sits Tight Under Red Shelling.....	166

ECONOMICS:

The Economics Pattern: Slichter Challenges Fed Policy.....	70
--	----

INDUSTRIES:

Aluminum Hopes New Design Will Sell Bridges. Fairchild's aviation-design structure is getting a friendly look from the U. S. Bureau of Public Roads.....	60
--	----

LABOR:

The Amazing Auto Contract. How a "mature" contract gives the union quite a bit—with no financial blow to Ford.....	133
In Labor. News about the cost of living, West Coast truckers' strike, airlines' wage hike for machinists, lumber workers' pay.....	139

MANAGEMENT:

Business Giving Stays High.....	65
In Management.....	69

MARKETING:

In Marketing.....	177
Videotape Brings Change to TV.....	178
Light Load Truck. I-H's Metro-Mite challenges Volkswagen.....	182
New Surge to the Growth Stocks. Investors shy away from defensive shares, buy both growth and cyclical shares.....	141

THE MARKETS:

In the Markets. News about Secy. Anderson's appeal for bond-buying, SEC actions against Arvida brokers and Canadian Javelin, possible third exchange in New York.....	146
---	-----

MONEY & CREDIT:

In Money and Credit. News about inflation views, criticism of S&Ls' ruling board, funds for world trade.....	174
--	-----

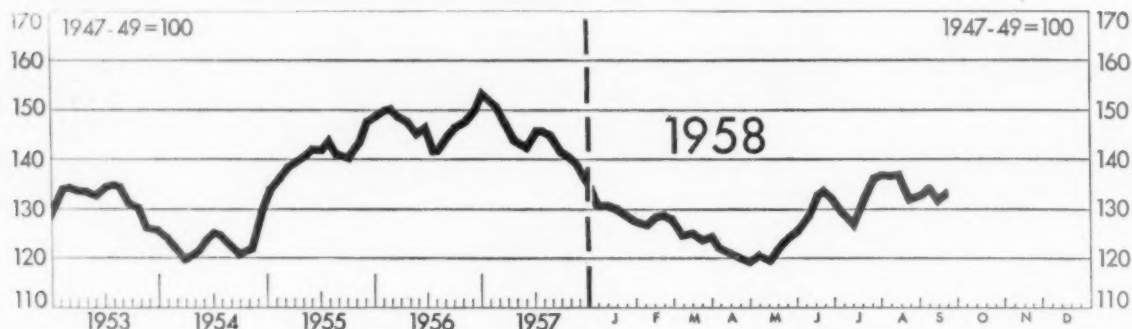
PRODUCTION:

New Way to Make Better Iron. Strategic Materials Corp. and Koppers Co. unveil plant to turn ore into semi-steel.....	172
New Products.....	173

RESEARCH:

In Research. News about electronic earmuffs, cancer cells, algae for space travel, radio telescope.....	73
---	----

FIGURES OF THE WEEK



BUSINESS WEEK INDEX (chart)

1946 Average	Year Ago	Month Ago	Week Ago	Latest Week
91.6	141.1	133.1	†132.9	*134.3

PRODUCTION

Steel ingot (thous. of tons).....	1,281	2,105	1,715	†1,771	1,793
Automobiles and trucks.....	62,880	68,875	38,096	†32,097	54,509
Engineering const. awards (Eng. News-Rec. 4-wk. daily av. in thous.).....	\$17,083	\$54,222	\$67,570	\$59,794	\$58,614
Electric power (millions of kilowatt-hours).....	4,238	11,991	12,486	12,248	12,240
Crude oil and condensate (daily av., thous. of bbls.).....	4,751	6,840	6,875	7,009	7,087
Bituminous coal (daily av., thous. of tons).....	1,745	1,683	1,346	†1,404	1,391
Paperboard (tons).....	167,269	296,404	293,915	305,978	311,174

TRADE

Carloadings: mfrs., miscellaneous and l.c.l. (daily av., thous. of cars).....	82	68	58	64	63
Carloadings: all others (daily av., thous. of cars).....	53	55	47	49	48
Department store sales index (1947-49 = 100, not seasonally adjusted).....	90	140	124	123	145
Business failures (Dun & Bradstreet, number).....	22	287	272	256	262

PRICES

Spot commodities, daily index (Moody's, Dec. 31, 1931 = 100).....	311.9	403.4	393.1	392.4	392.9
Industrial raw materials, daily index (BLS, 1947-49 = 100).....	†173.2	89.3	85.9	85.9	86.0
Foodstuffs, daily index (BLS, 1947-49 = 100).....	†175.4	83.7	86.5	86.2	85.8
Print cloth (spot and nearby, yd.).....	17.5¢	17.8¢	17.7¢	17.7¢	17.7¢
Finished steel, index (BLS, 1947-49 = 100).....	†176.4	181.5	186.4	186.6	186.6
Scrap steel composite (Iron Age, ton).....	\$20.27	\$43.83	\$42.50	\$43.17	\$43.17
Copper (electrolytic, delivered price, E & MJ, lb.).....	14.045¢	26.920¢	26.500¢	26.485¢	26.500¢
Wheat (No. 2, hard and dark hard winter, Kansas City, bu.).....	\$1.97	\$2.11	\$1.94	\$1.93	\$1.95
Cotton, daily price (middling, 1 in., 14 designated markets, lb.).....	**30.56¢	33.19¢	34.81¢	34.66¢	34.66¢
Wool tops (Boston, lb.).....	\$1.51	\$2.12	\$1.72	\$1.68	\$1.68

FINANCE

500 stocks composite, price index (S&P's, 1941-43 = 10).....	17.08	43.24	47.78	48.96	49.40
Medium grade corporate bond yield (Baa issues, Moody's).....	3.05%	4.95%	4.72%	4.89%	4.88%
Prime commercial paper, 4 to 6 months, N. Y. City (prevailing rate).....	¾-1%	4%	2¼%	2½%	2½%

BANKING (Millions of Dollars)

Demand deposits adjusted, reporting member banks.....	††45,820	55,094	55,323	56,719	56,800
Total loans and investments, reporting member banks.....	††71,916	87,052	94,756	94,703	94,118
Commercial and agricultural loans, reporting member banks.....	††9,299	32,603	29,932	30,084	30,467
U. S. gov't guaranteed obligations held, reporting member banks.....	††49,879	24,747	33,297	32,664	31,913
Total federal reserve credit outstanding.....	23,888	25,719	26,665	26,661	26,644

MONTHLY FIGURES OF THE WEEK

	1946 Average	Year Ago	Month Ago	Latest Month
Cost of living (U. S. Dept. of Labor BLS, 1947-49 = 100)..... August.....	83.4	121.0	123.9	123.7
McGraw-Hill Indexes of New Orders (1950 = 100)				
New Orders for machinery, except electrical (seasonally adjusted)..... August.....	N.A.	146	163	156
Construction & mining machinery..... August.....	N.A.	151	†174	168
Engines & turbines..... August.....	N.A.	153	†105	169
Pumps & compressors..... August.....	N.A.	156	†161	161
Metalworking machinery..... August.....	N.A.	106	†74	79
Other industrial machinery..... August.....	N.A.	132	†155	148
Office equipment..... August.....	N.A.	145	†160	147
New contracts for industrial building..... August.....	N.A.	140	89	73

* Preliminary, week ended September 20, 1958.
† Revised.

†† Estimate.
** Ten designated markets, middling ½ in.

Date for 'Latest Week' on each series on request.
N.A. Not available.

THE PICTURES—Cover—Morris Rosenfeld; 6—Grant Compton; 39—Gene Pyle; 42—(top row) U.P.I., (second row, lt.) W.W., (second row, rt.) U.P.I., (third row) U.P.I., (fourth row, lt.) W.W., (fourth row, rt.) National Park Service, (fifth row) U.P.I.; 43—(top row) W.W., (second row, lt. & third) W.W., (second row, second & fourth) U.P.I., (third row, lt., third & fourth) W.W., (third row, second) U.P.I., (fourth row) Harris & Ewing, (bot.) Joan Sydlow; 46—(lt.) U.P.I., (rt.) Compton & Kratovil; 47, 48—Compton & Kratovil; 60—Fairchild Engine and Airplane Corp.; 67—Bankers Trust Co.; 69—B. F. Goodrich Co.; 74, 75, 76, 77, 82, 83, 88, 89, 90, 95, 96, 97, 101—Richard Green; 156—(top) Lou Smith Organization, (bot.) U.P.I.; 158—Joan Sydlow; 166, 167—Sol Sanders; 173—Hans Basken; 182—International Harvester Co.

B.F. Goodrich



It's a stomach pump for a coal mine

B.F. Goodrich improvements in rubber brought extra savings

Problem: Getting rid of pools of water that collect in this coal mine is a constant job. Let it accumulate, and in just a few days enough water could pour in to flood the underground pumps, damage machinery, close the mine down. At first, iron pipe was used to drain the pools. But the water contains acid that eats holes in metal. Flexible rubber hose, reinforced with wire, was tried, and worked fine until it was run over several times and crushed flat by heavy mining equipment.

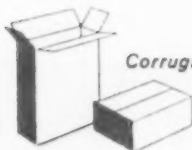
What was done: When a B.F. Goodrich man heard of the trouble, he recommended a B.F. Goodrich hose that springs back to shape when run over. A continuous coil of hemp rope, specially treated and buried in thick rubber, makes this hose strong enough to stand the suction, yet flexible enough to spring back to its round shape after being crushed.

Savings: Since 1953, B.F. Goodrich water hose has worked night and day to keep this mine dry. It has gulped

millions of gallons of acid water, been run over countless times by shuttle cars and other equipment. But despite the abuse, it lasts four times longer than the hose used before, saves an estimated 75% in maintenance costs.

Where to buy: Your B.F. Goodrich distributor has exact specifications for the B.F. Goodrich hose described here. And, as a factory-trained specialist in rubber products, he can answer your questions about *all* the rubber products B.F. Goodrich makes for industry. B.F. Goodrich Industrial Products Company, Dept. M-447, Akron 18, Ohio.

B.F. Goodrich *industrial rubber products*



Corrugated Fibre Boxes



Corrugated Paper Products

Revolutionary!



HERE'S THE DYNAMIC NEW LOOK FOR YOUR SHIPPING CONTAINER

Fort Wayne's new and exclusive FW-printing is giving corrugated containers an unprecedented sales promotion lift with eye appeal and display values never before possible in the industry.

Your container now can sell with extra color, halftone shading and variation, complex design requiring meticulous printing accuracy—and on a mass production basis. You actually can use fine advertising art tied in with your national campaigns.

Amazing? That's an understatement. And we're proud to make available this tremendous advancement to mark our 50th year since pioneering in the container industry.

We'll be pleased to help *you* take advantage of FW-printing and the new Fort Wayne container look.

A copy of the company's latest financial report may be obtained by writing to Harold M. Treen, President, Fort Wayne Corrugated Paper Company, Fort Wayne 1, Indiana.

Fort Wayne CORRUGATED PAPER COMPANY
GENERAL OFFICES, FORT WAYNE 1, INDIANA



**50th
YEAR**

EDITOR & PUBLISHER Elliott V. Bell

MANAGING EDITOR Kenneth Kramer

ASSISTANT MANAGING EDITOR Robert B. Colborn

ASSOCIATE MANAGING EDITORS John L. Cobbs, Peter French, Eugene Miller

SENIOR EDITORS

Clark R. Pace, Howard Whidden, M. J. Rossant

DEPARTMENTS

Business Outlook: Clark R. Pace, *Editor*; Sam I. Nakagama

Economics: Leonard Silk, *Editor*

Finance: William McKee Gillingham, *Editor*; Albert C. Lasher

Foreign: Howard Whidden, *Editor*; Paul Finney, F. R. Lehaney

Industrial Production: Theodore B. Merrill, Jr., *Editor*; C. Peter Buckley; Anthony Astrachan

Labor: Edward T. Townsend, *Editor*; Thomas R. Brooks

Management: Lee Geist, *Editor*; Edward McCreary, Daniel B. Moskowitz

Marketing: Richard L. Waddell, *Editor*; Cora Carter, Jack E. Patterson

Money & Credit: M. J. Rossant, *Editor*; Irwin Lainoff

Personal Business: Joseph L. Wiltsee, *Editor*; Nathalie E. Lampman

Regions: Werner Renberg, *Editor*

Research: Jane H. Cutaia, *Editor*

Copy Editors: T. B. Crane (*Senior Copy Editor*), Jeanne A. Bernhardt, Robert F. Deed, John A.

Dierdorff, Lawrence H. Odell, Doris I. White

Staff Writers: John H. Maughan, Christopher Elias

Editorial Assistants: Edward J. Burgess, Jr., Jean Drummond, John Hudor, Herbert Klein,

Kathleen Kundel, Robert F. Murphy

Illustration: Richard A. Wolters, *Editor*; Robert Isear, *Pictures*; Frank Ronan, *Graphics*; Grant

Compton, Mario De Vincentis, Jack H. Fuller, Herbert F. Kratovil, Jomary Mosley, Arthur Richter,

Joan Sydow

Library: Jane G. Raczka, *Librarian*; Tessie Mantzoros

Assistant to the Editor & Publisher: Gerald W. Schroder

U.S. & CANADIAN NEWS SERVICE

Atlanta Bureau: Glenn McCullough, *Manager*; Frances Ridgway

Boston Bureau: Brenton Welling, Jr., *Manager*; Lucie Adam

Chicago Bureau: Merlin H. Mickel, *Manager*; Franklin N. Karmatz, Joanne Sponsler

Cleveland Bureau: John K. Fockler, *Manager*; Violet Bashian

Detroit Bureau: William Kroger, *Manager*; Michael Davis

Houston Bureau: Normand DuBeau, *Manager*; John Whitmore III

Los Angeles Bureau: Thomas M. Self, *Manager*; James P. Roscow, Margaret Hayes McKibben

Milwaukee Bureau: Keith G. Felyn, *Manager*; Kathleen C. Horan

Philadelphia Bureau: W. B. Whichard, Jr., *Manager*; Richard C. Halloran; Eileen P. Schneider

Pittsburgh Bureau: Richard N. Larkin, *Manager*; George W. New; Mary K. McCaffery

San Francisco Bureau: Richard Lamb, *Manager*; Margaret I. Scandling

Toronto Bureau: John D. Harbron, *Manager*; Jean Ross-Skinner

Washington Bureau: George B. Bryant, Jr., *Manager*; Alan E. Adams, Glen Bayless, Roy Calvin,

Ernest Conine, Anthony DeLeonardis, John C. L. Donaldson, Jay Flocken, Boyd France, Arthur

J. Kraft, Donald O. Loomis, Gladys Montgomery, Arthur L. Moore, Seth Payne, Dean Reed,

Morton A. Reichel, Caroline Robertson, Vincent Smith

McGRAW-HILL ECONOMICS STAFF

Dexter M. Keezer, Director: William H. Chartener, E. Russell Eggers, Douglas Greenwald, Margaret K. Matulis, Robert P. Ulin

McGRAW-HILL NEWS SERVICE

Manager: John Wilhelm; **Beirut:** O. M. Marashian; **Bonn:** Morrie Helitzer, Silke Brueckler; **Caracas:** John Pearson; **London:** John Tunstall, Robert Gibson, Derek Barlow, John Shinn; **Mexico City:** Peter Weaver; **Moscow:** William J. Coughlin; **Paris:** Robert E. Farrell, Helen Avati; **Tokyo:** Sol Sanders, Toshiko Matsumura; **Atlanta:** Charles T. Dixon, Jr.; **Cleveland:** William G. Meldrum; **Dallas:** Kemp Anderson, Jr., Mary Lorraine Smith; **Detroit:** Donald MacDonald, Nancy Ann Moore; **Los Angeles:** John Kearney, Michael J. Murphy; **San Francisco:** Margaret Ralston, Jenness Keene, Sue Johnson

ASSOCIATE PUBLISHER Bayard E. Sawyer

ADVERTISING DIRECTOR John M. Holden

BUSINESS MANAGER Richard E. McGraw



BUSINESS WEEK • SEPTEMBER 27, 1958 • NUMBER 1517

(with which are combined The Annalist and the Magazine of Business) Published weekly by McGraw-Hill Publishing Company, Inc., James H. McGraw (1860-1948), Founder. **PUBLICATION OFFICE:** 99-129 North Broadway, Albany 1, N. Y. See panel below for directions regarding subscriptions or change of address. **EXECUTIVE, EDITORIAL, CIRCULATION AND ADVERTISING OFFICES:** McGraw-Hill Building, 330 West 42nd Street, N. Y. 36, N. Y. Donald C. McGraw, President; Joseph A. Gerardi, Executive Vice President; L. Keith Goodrich, Vice President and Treasurer; John J. Cooke, Secretary; Nelson Bond, Executive Vice President, Publications Division; Ralph B. Smith, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator. Subscriptions to Business Week are solicited only from management men in business and industry. **POSITION AND COMPANY CONNECTION MUST BE INDICATED ON SUBSCRIPTION ORDERS. SEND TO ADDRESS SHOWN IN BOX BELOW.** United States subscription rates for individuals in the field of the publication, \$6 per year, single copies 50¢. Second class mail privileges authorized at Albany, N. Y. Printed in U. S. A. Title registered in U. S. Patent Office. © Copyright 1958 by McGraw-Hill Publishing Co., Inc. All rights reserved.

SUBSCRIBERS: Send subscription correspondence and change of address to Fulfillment Manager, BUSINESS WEEK, 330 W. 42nd Street, N. Y. 36, N. Y. Subscribers should notify Fulfillment Manager promptly of any change of address, giving old as well as new address, and including postal zone number, if any (official Post Office request). If possible, enclose an address label from a recent issue of the magazine. Since copies are addressed one to two issues in advance, please allow one month for change of address to become effective.

POSTMASTER . . . Please send form 3579 to Business Week, 330 W. 42nd Street, N. Y. 36, N. Y.

READERS REPORT

Slid, Slud, Slidden

Dear Sir:

Apparently you have allowed your phrasing to slide into a trap in Business Outlook, [BW—Aug. 23 '58, p. 12] line 5, where you found yourself in the position of using the past participle of the verb, "slide." This verb has no past participle, and it is necessary to substitute the form of the past tense. However, if you will pay close attention to that eminent grammarian Mr. "Dizzy" Dean, who broadcasts baseball on Saturday afternoons, you will find that the past participle of this verb may well be written as "slud."

To avoid future instances of this kind, I suggest you procure a copy of Roguet's Thesaurus.

R. O. WILSON

COSDEN PETROLEUM CORP.
ARLINGTON, TEX.

• How about slid (pres.), slud (past), slidden (past part.)? We find that Webster's New International, Second Edition, Unabridged, lists as the past participle slid, slidden. And, on the subject of the Thesaurus, we have copies of Roguet's, but, unfortunately, haven't been able to lay hands on one of Roguet's.

Businessmen in Politics

Dear Sir:

I was very much interested in reading For Company Presidents More—Not Less—Outside Activity [BW—Aug. 23 '58, p. 80].

Personally, I feel that men with business backgrounds are sorely needed in the political arena. They are qualified to do an excellent job on school boards, city councils, local authorities, etc.

The writer has for a number of years actively participated in numerous city offices, and can truthfully report it has been a most interesting experience. . . .

MOSE LEIBOWITZ

MOSE LEIBOWITZ, INC.
YORK, PA.

Cyclone in a Demitasse

Dear Sir:

Fallout Peril [BW—Aug. 16 '58, p. 56] seems to present in perspective the cyclone in a demitasse which has hissed out of the ever-whistling propaganda kettle. Though tobacco-cancer linkage



REULAND STANDS BEHIND ITS PRODUCTS

If you have purchased equipment on which Reuland motors are installed, you can be assured that this philosophy of doing business is built into every single Reuland motor you own... in as tangible a form as the metal itself. Not only as a standard "service policy"... but by the kind of understanding and consideration that comes only from a company dedicated to fairness and service.

Quite likely you will never have an occasion to draw on this policy, but it is reassuring to know that it is there, wherever you may be.

Yes, across the Nation... or around the globe, Reuland stands behind every product that bears its name... stands behind it with a great company-wide pride that can only bring you full satisfaction at every turn.

Our new 8-page brochure

"MODERN MOTORS FOR MODERN-DAY PRODUCTS"
will be helpful in your work. Please write for your free copy.

REULAND  MOTORS

REULAND ELECTRIC COMPANY

Western Division: Alhambra, California • Eastern Division: Howell, Michigan
Distributors in all principal cities

seems far more conclusive, and the effect more deadly, no one has proposed a UN ban on tobacco.

Mutations by the millions already exist in various individuals, carried down through eons of exposure to natural radiation. Most of the worst have dropped out through natural selection but thousands that impair the future of the race remain. Let us begin to breed these out before boiling over about a few hypothetical new ones.

P. S. BARROWS

DEL MAR, CALIF.

Fast-Growing Sales

Dear Sir:

You published an article under the heading Puffing Up Canadian Cigarettes [BW—Aug. 25, 1958, p87]. In that article it is stated that my company claims 3% of the total Canadian cigarette market.

... at the time of publication of the article our sales amounted to double the quoted 3%, and they are today approaching 10% of the total market.

A. W. S. POLLOCK

PRESIDENT

ROTHMANS OF PALL MALL

CANADA LTD.

TORONTO, ONTARIO



H. C. Keesecker

Wrong Name

Dear Sir:

In connection with your article on our company [BW—Sep. 20, 1958, p92] you identify picture of H. C. Keesecker, vice president, domestic sales as John M. Wilson. Mr. Wilson retired December 31, 1957 and was succeeded by Mr. Keesecker.

S. C. ALLYN

CHAIRMAN OF THE BOARD

NATIONAL CASH REGISTER CO.

DAYTON, OHIO

Those Two Important Words on Your Telephone

Western Electric is the manufacturing and supply unit of the Bell System. Its specialized abilities in these fields and the efficiencies and economies of centralized operation have proved of great value over many years.

There's a distinct advantage for telephone users in the fact that Western Electric works for the most part only for the Bell System, and for the U. S. Government when called upon.

Because defense and telephone service are so vital, Western Electric must manufacture for the utmost in dependability and long life without compromise anywhere along the line.

The repeater units in the new underseas cables are one example of how Western Electric must build for long, trouble-free service.

A further advantage is the way research and manufacturing are tied



WESTERN ELECTRIC means efficiency, quality and long life in telephone equipment. All are reflected in the speed, clarity and dependability of your telephone service.

together. Being a part of the Bell System, Western Electric can work closely with the Bell Telephone Laboratories and the local telephone companies.

Western Electric must be ready at all times to produce 200,000 kinds of apparatus and component parts for telephone equipment. It also purchases for the Bell System, distributes supplies, and installs central office equipment.

Western Electric maintains thirty-two warehouses strategically located throughout the country. You have seen dramatic evidence of the benefits of this arrangement in fire, flood, hurricane and other emergencies. They are important also in plans for national defense.

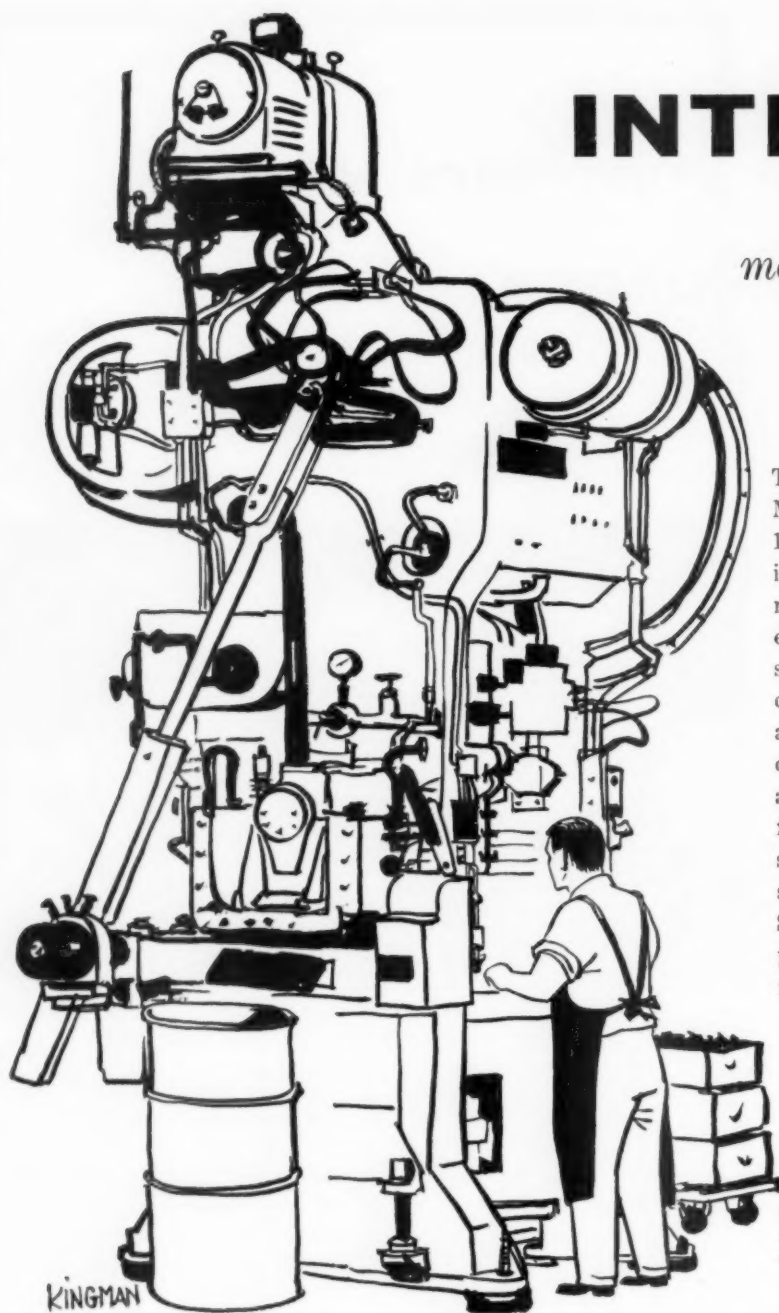
There are great values in the Western Electric setup. No other way would work out half so well for telephone users and the nation.

BELL TELEPHONE SYSTEM



INTRICATE

*metal products for 174
million customers*



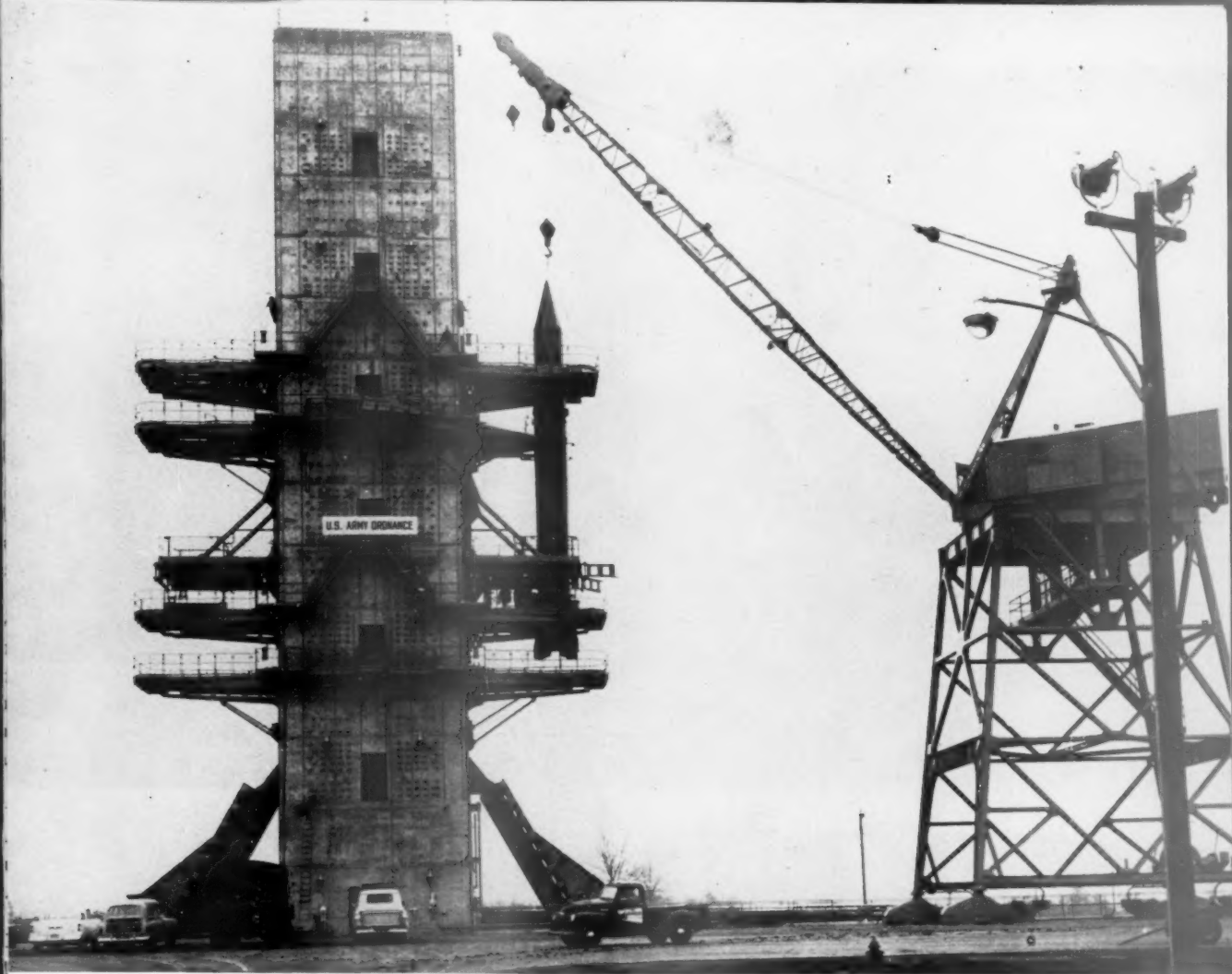
This automatic press in the General Manufacturing Division exerts a 100-ton squeeze to form metal with intricate progressive dies. From this machine come speedometer dials, elements for automobile thermostats, tamper-proof pharmaceutical caps, and hundreds of other parts and products...calling for the precision production in quantity characteristic of the skill and equipment found in all divisions of Scovill. This special skill with metals is seen in such varied Scovill products as Schrader tire valves, GRIPPER zippers, and in intricate electrical relays for missile controls.

Scovill Manufacturing Co., Waterbury, Conn., with 17 plants, 31 warehouses and 42 sales offices in 32 U.S. cities and 4 foreign countries.

SCOVILL

DIVISIONS AND SUBSIDIARIES:

**MILL PRODUCTS • GENERAL MANUFACTURING • CLOSURE • FORGING AND SCREW MACHINE
OAKVILLE COMPANY (INCLUDING DE LONG) • A. SCHRADER'S SONS • LYNDON AIRCRAFT, INC.
WATERVILLE • HAMILTON BEACH COMPANY • AIRTRONICS, INC. • COSMETIC CONTAINER**



U.S. Army's Redstone Missile being positioned in static test tower at Ballistic Missile Agency.

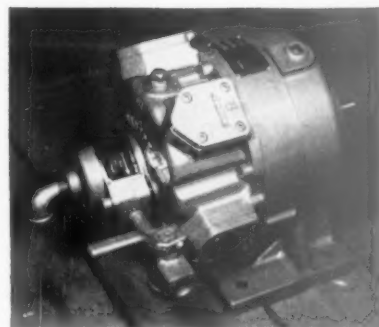
Giant Pincers Grip Ballistic Missiles in Tests

An economical way to test a guided ballistic missile is to hold it fast while it is firing. The static testing tower shown above is designed to do just that. Located at the Army Ballistic Missile Agency, Redstone Arsenal, Alabama, it tests both Jupiter and Redstone Army missiles.

In testing, the missiles are gripped by the platforms around the tower. These platforms, operated by Gardner-Denver air motors, open like giant pliers, then close to hold the missiles securely. Exhaust blasts

from the missiles are deflected by the steel plates at the base of the tower.

Gardner-Denver air motors are performing many an equally useful—if less spectacular—service in industry today. Compact, yet highly powerful, these motors are non-sparking and non-shortening—and can take overloads without burning out. That is why the use of these motors by machine designers is now steadily increasing. Gardner-Denver Company, Quincy, Illinois.

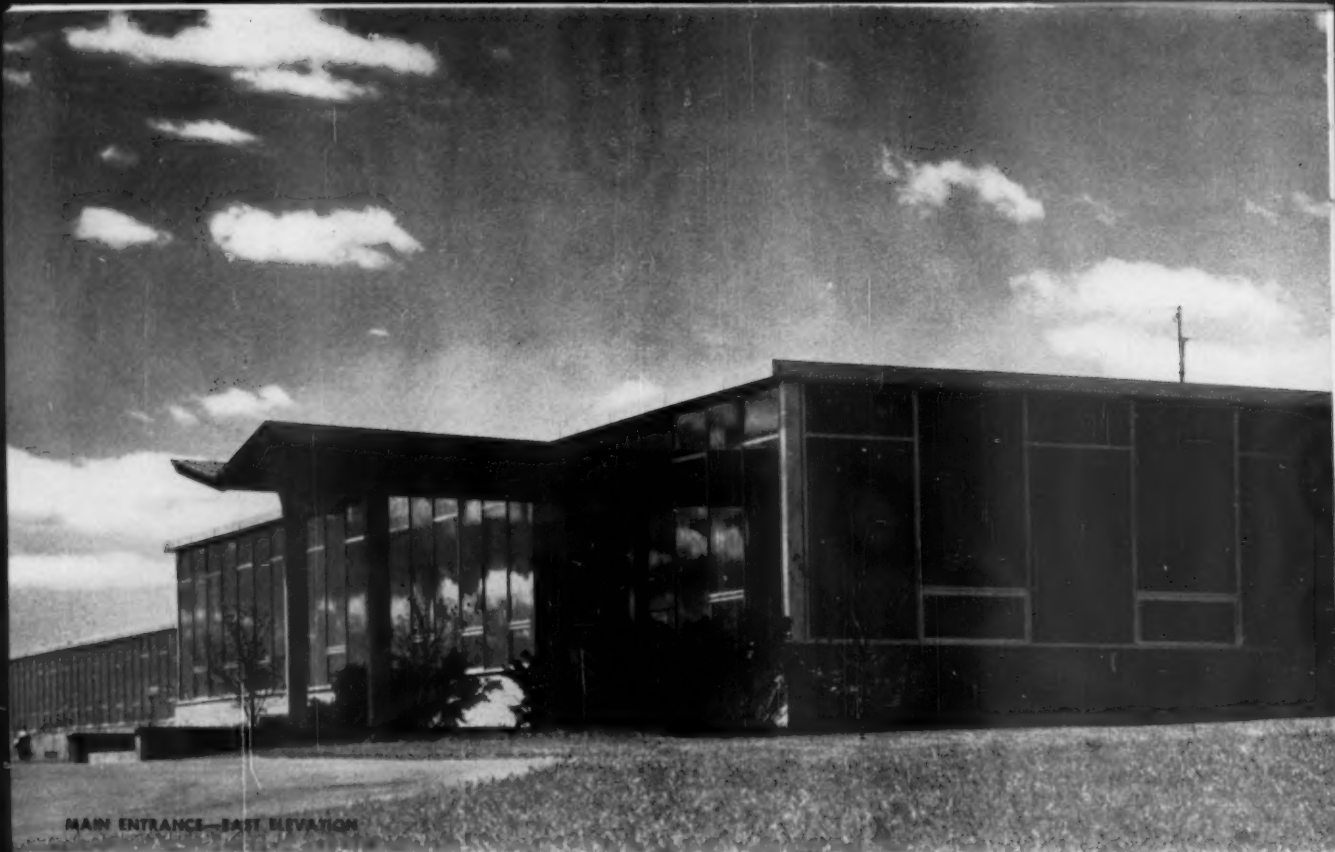


A typical Gardner-Denver five-cylinder radial air motor.



ENGINEERING FORESIGHT—PROVED ON THE JOB
IN GENERAL INDUSTRY, CONSTRUCTION, PETROLEUM AND MINING

GARDNER - DENVER



MAIN ENTRANCE—EAST ELEVATION

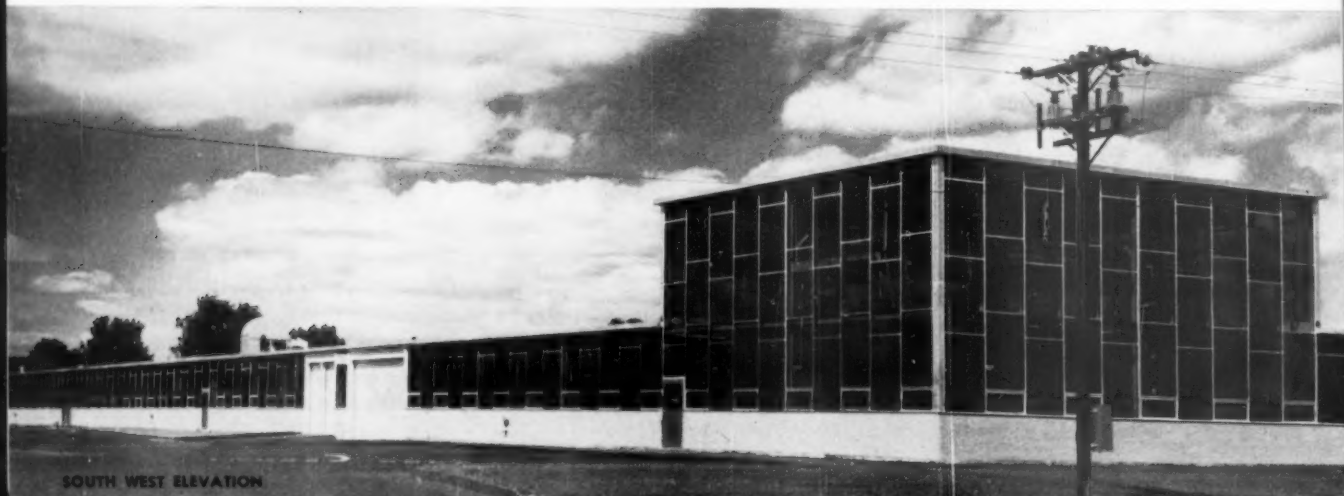
Another **AMERICAN Lustragray** Installation...

the glass that reduces sun glare and heat without sacrificing vision

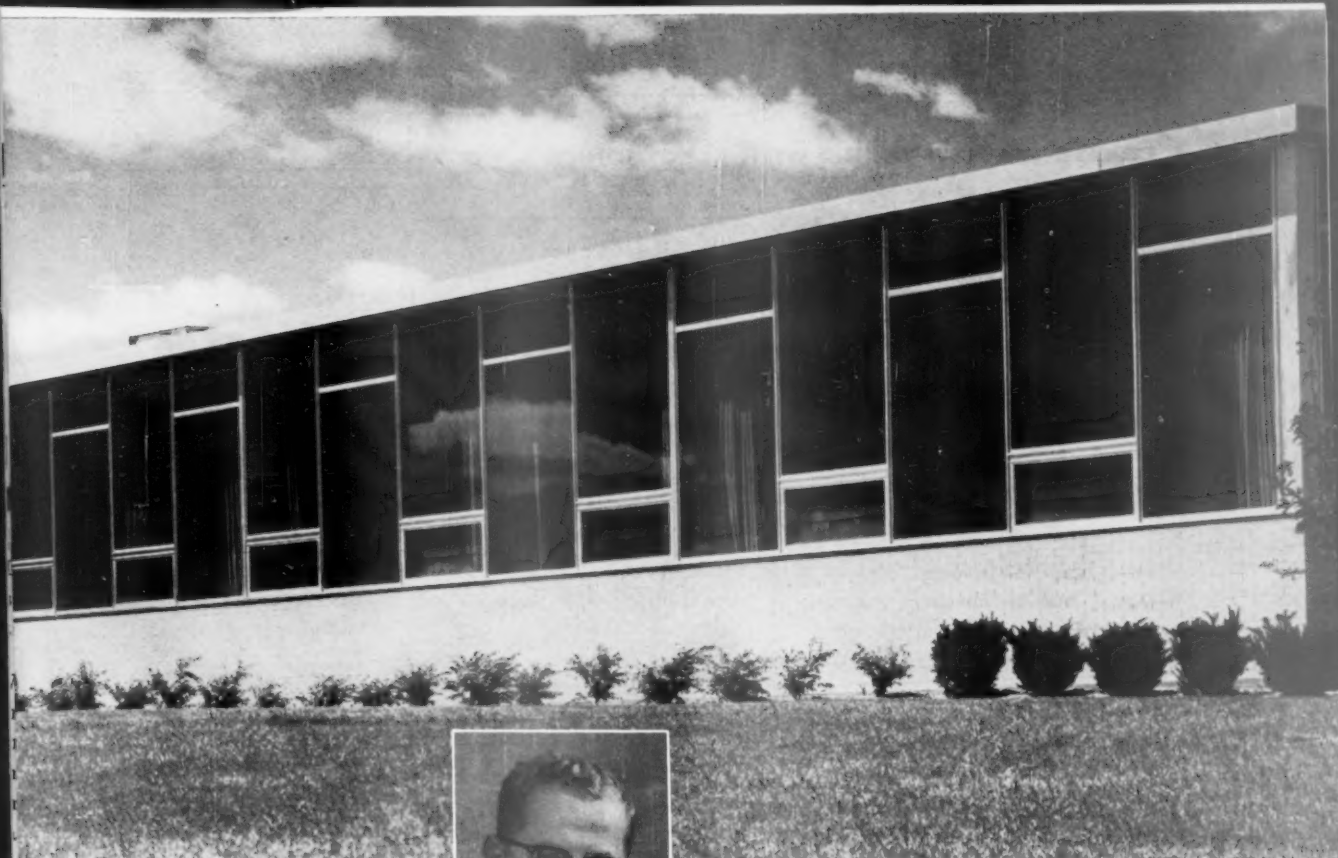
Subject: *Phalo Plastics Building, Shrewsbury, Mass.*

Builder: *Lilly Construction Company, Boston, Mass.*

Glasier: *Waltham Door & Window Company, Waltham, Mass.*



SOUTH WEST ELEVATION



*Michael Lilly, Partner,
Lilly Construction Co.*

the builder has his say about

Lustragray's

client appeal:

"I've used Lustragray on quite a few jobs now because my clients like what it offers. Its degree of opacity gives a feeling of solidity to a building that has large areas of glass. They also like the glare-reducing feature of this glass. It's easy on the eyes, yet provides cheerful "clear glass" vision from the interior. Also, its neutral gray shade doesn't limit the selections of colors for furnishings or exterior wall materials. Probably the biggest reason my clients use Lustragray is its attractive appearance. The glass gives a building a look of distinction. And, too, the price is right."

See what Lustragray can do for your next building. Consult your phone directory for your nearest AMERICAN distributor or glazier, or write our Architectural Promotion Division—Dept. LG—today.



AMERICAN WINDOW GLASS DIVISION



AMERICAN-SAINT GOBAIN
CORPORATION




General Offices: FARMERS BANK BUILDING • PITTSBURGH 22, PA.

AMERICAN-SAINT GOBAIN CORPORATION is a merger of the former American Window Glass Company, Pittsburgh, Pa., and the former Blue Ridge Glass Corporation, Kingsport, Tenn. (which was a wholly-owned subsidiary of Saint-Gobain of Paris, France). American Window Glass Division plants are located in Arnold, Jeannette, Ellwood City, Pa.; Okmulgee, Okla. Blue Ridge Glass Division plant is located in Kingsport, Tenn.

The Ant and the Diode





The ant, renowned for its industry, astonishing strength, and highly organized society, has an electronic counterpart—the tiny diode.

With work capabilities far transcending their insignificant size, diodes direct the flow of electronic impulses through computing and control systems by making lightning-fast “yes/no” decisions. In complex modern systems, diodes are as numerous as ants in an anthill.

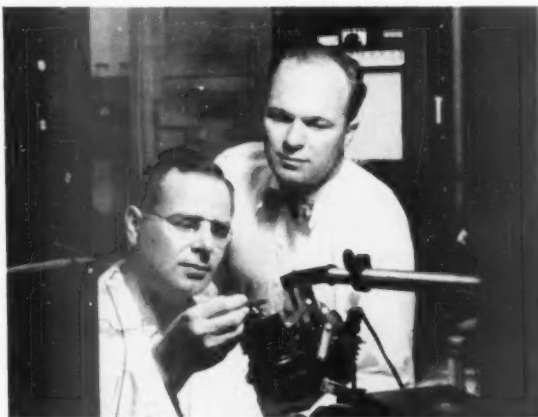
HUGHES diodes, designed and manufactured to standards that are the highest in the industry, are in wide usage in U.S. defense systems—and in industrial applications where there is a premium on reliability.

The “worker ants” of modern electronics, HUGHES diodes have a built-in stamina that withstands extreme abuse, assuring long life, maximum efficiency and dependability.



HUGHES diodes (and ants) shown actual size

HUGHES systems and components are backed by the brainpower of *over five thousand* HUGHES engineers and scientists. The constant thinking, development and improvement pouring from these highly trained, searching minds is your assurance that HUGHES products are the finest that human ingenuity and technical know-how can devise.



Research physicists, shown studying a silicon crystal with impurity atoms introduced, further HUGHES advances in solid state physics.

If you manufacture or use electronic equipment, we will welcome the opportunity to demonstrate how HUGHES electronic systems and components can improve your products and your profit picture.

HUGHES PRODUCTS

International Airport Station, Los Angeles 45, California

Creating a new world with ELECTRONICS

HUGHES PRODUCTS

METALS

They're

New technique—Chemical Milling—shapes metals faster and cheaper than machining. Closer tolerances are possible, too.

A "machineless machining" process first experimentally applied to aluminum rocket casings less than five years ago is now producing better parts and saving money for major aircraft, missile, and other fabricators of various metals.

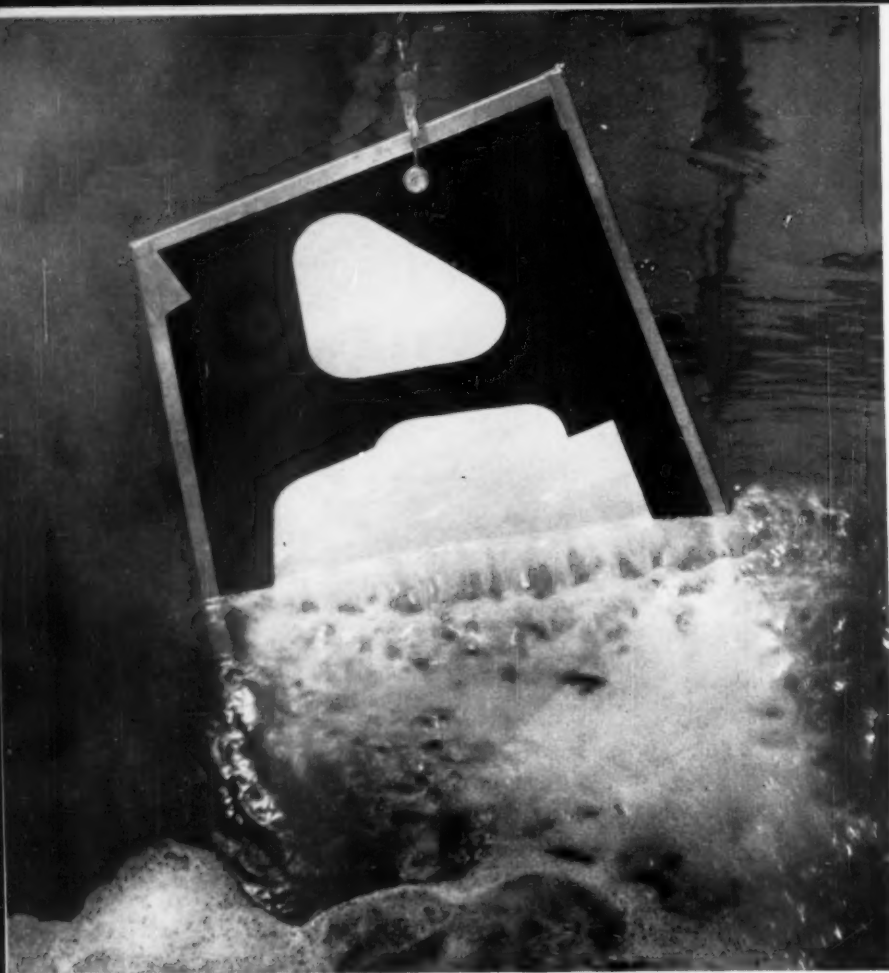
In its simplest form, chemical milling occurs when the part you want to form is dunked, like a doughnut, into a vat containing chemical solutions. Sections of the part which are not to be etched away, or milled, are masked with plastic or other impervious materials.

• **Original Development** — North American Aviation was engaged in experimental work on the process by 1953. Patent Number 2739047 was granted to the company on March 20, 1956. Recognized as the basic CHEM-MILL patent, it covers "a chemical method of milling a formed metallic sheet."

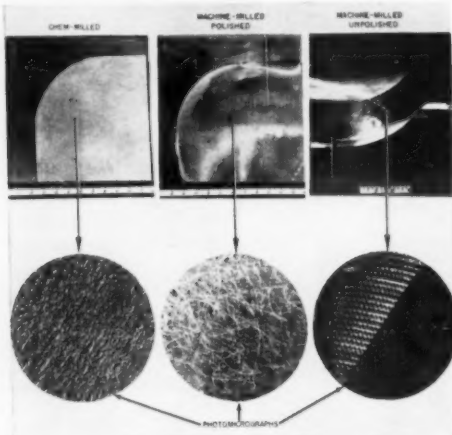
While the essential metal-dissolving substance in an aluminum etchant solution is caustic soda, it is necessary to add other chemicals to insure smoothly etched surfaces, and to extend the useful life of the solution. The complete and balanced formulas being used by the industry have been developed chiefly by the CHEM-MILL Division of Turco Products, Inc., of Los Angeles, which is the sole licensing agent for some seventeen issued patents covering various aspects of the process. Through a 1954 license from North American, Turco continues to formulate specific etchants, maskants, and other products used within and without the aircraft industry.

• **Dead Weight Gone** — Convair Division of General Dynamics Corporation chemically mills many parts going into the Convair 880, near-sonic jet airliner which will be in regular service by 1960. G. C. Green, Chief Structures Engineer at Convair-San Diego, says, "It saves the necessary weight and maintains high structural strength."

John Bergstrom, Convair Senior Design Group Engineer, reports that exhaustive tests were run to make certain that chemical milling left the aluminum alloy metal every bit as strong as would machine milling. When the tests showed



MISSILE PART goes into caustic bath. Darker sections have been masked, light areas will be etched. Chemical action begins immediately, causing turbulence seen above.



COMPARATIVE SURFACES produced by North American's patented CHEM-MILL process (left) and machine milling (center and right) are shown by photomicrographs.

ACCURACY and detail achieved with chemical milling by North American is displayed at left. These intricately shaped parts were produced with lower costs, less weight, and shorter times than possible with machine milling.

Shaping Parts with Caustic Soda

this to be true, chemical milling was specified to reduce weight with no loss of strength in critical fuselage areas such as aft pressure bulkheads. The fuselage of the Convair 880 must be extremely tough to insure absolute safety; the cabin is pressurized to simulate the atmosphere at 6,000 feet when the aircraft actually is flying at 35,000 feet.

Douglas Aircraft, too, experiences excellent results in shaping massive aluminum bulkheads. The metal is first formed into a general umbrella shape by conventional means. At this stage, the bulkhead is much thicker and heavier than it need be to perform its ultimate job.

Stiffener rib areas are masked with plastic. The part is lowered into a caustic bath, largely sodium hydroxide. When the right amount has been eaten away, the part is removed, rinsed, and the plastic coating peeled. The final form emerges: a thin, terrifically strong umbrella-like bulkhead with 16 ribs.

- **Faster than Machining**—Of almost equal importance to Douglas is the greatly shortened time required to get a new part into production. After a part has been released by Design, it generally takes up to another three months to design and build the tools needed to produce it. Setting up a method of making the same part with chemical milling saves over two months.

- **Reaches Where Tools Can't**—Lockheed Aircraft has recently installed new facilities which triple the company's capacity for chemical milling. Engineers report highly satisfactory results with "parts it would be practically impossible to mill with any other method." In their experience, the process has many special applications where substantial weight and cost savings can be effected.

- **Costs are Less**—There's less labor involved in milling with chemicals, of course. In the machining process, skilled operators are generally hunched over their machines until the work is done. When parts are formed in tanks of chemicals, however, workers can leave

them there and do something else. Timing devices for extraction, like those in electroplating, cut labor costs further.

Douglas, for example, finds chemical milling "generally more economical than conventional methods . . . generally delivers a better product, and in some instances is the only practical way to make some parts." A specific instance: with chemical milling, costs for forming 100 fuselage parts amount to \$19.90 each. Costs with the machining process formerly used amounted to \$126.34 per part.

Lockheed cost men say figures indicate that for many parts, chemical milling cuts costs "in half" over conventional methods.

Columbia-Southern will report future findings to interested customers. A leading supplier of caustic soda, soda ash, caustic potash and other basic alkalies, Columbia-Southern also manufactures metal degreasing solvents and other specialized industrial chemicals.

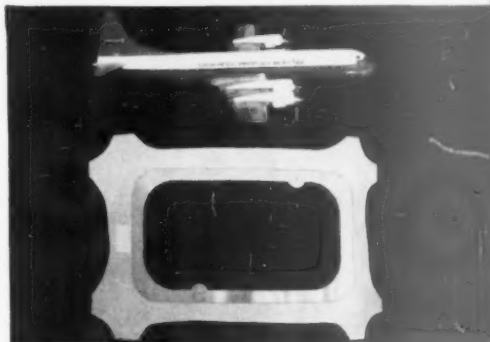
Columbia-Southern Chemical Corporation, One Gateway Center, Pittsburgh 22, Pennsylvania. Offices in principal cities. In Canada: Standard Chemical Limited.



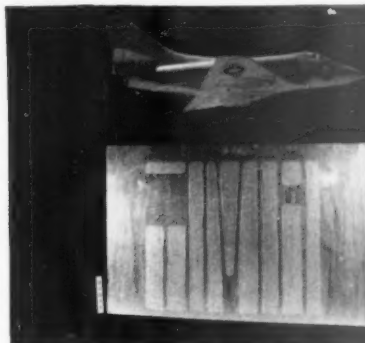
STRIPPED of dead weight by chemical milling, Northrop SM-62 Snark is the first intercontinental guided missile successfully test fired by USAF at 5,000 mile ranges.



POUNDS SHAVED by chemical milling lighten vital wing bulkheads for Convair 880 jet airliner. Worker strips protective film from heavy aluminum alloy sheet which doubles as structural member and fuel tank wall.



HUNDREDS of ducts, fittings, bulkheads and other components for Lockheed's Electra prop-jet are chemically milled for weight savings. Shapings like the step cuts on each side of this contoured emergency exit door cut costs and speed production.



DEEP ETCHING with chemicals also trims weight from this skin section and many other parts for the A4D Skyhawk and other Douglas aircraft.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION

A Subsidiary of Pittsburgh Plate Glass Company

This is our new



corporate face...

It is now in a newer form than our classic Worthington "wings", but it still represents to our customers, suppliers, and all who deal with us a most prized asset: our good name.

We changed our trademark for this reason: it is superior in recognition values and qualities to our old mark. We change our products and designs for the same reason. We change for the better, as each day we learn more and adapt our new knowledge to our existing products and organization.

This vigorous new "W" is as modern as Worthington itself, and it is symbolic of our reputation for qualities which make Worthington and Worthington products outstanding in performance, reliable in operation, trusted in every market place in the world.

And while this is our new "face", we take pride in recognizing in it the strength of our experience and skills. It is our good name.

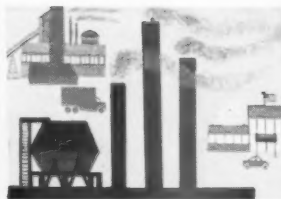
*Worthington Corporation, Harrison, New Jersey.
In Canada, Worthington, Ltd., Brantford, Ontario.*

WORTHINGTON



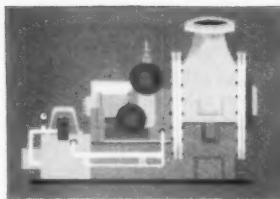
NEW sales organization

Separate internal organizations designed specifically to serve both direct sales and distributor sales. This business concept emphasizes the importance of gearing every phase of Worthington's Marketing Division to customer needs.



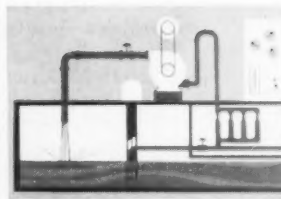
NEW decentralized operation

Each division is a separate business featuring integral application, manufacturing, and engineering staffs. Customer benefits from this concept include flexibility, authority at "do-it" levels, faster service, and efficient business dealings.



NEW products and lines

Lately Worthington has added many products to its broad line of power service equipment, such as automatic electronic, pneumatic and hydraulic controls, centrifugal expanders, rotary compressors and electrical distribution systems.



NEW emphasis on research

10 major laboratories keep Worthington in leading product position, abreast of fast-changing needs of its customers. Worthington spends about twice as much on research and development as the average industrial company.



The first thing your company has to sell is its salesman!

Regardless of what you sell... be it apples, baking soda, cosmetics or xylophones... there's one bit of selling that must be done before you can do *any* selling at all.

And that is... selling your salesman.

Your customer sees your salesman before he sees your package, your promotion or your product.

If your salesman makes a poor impression, he may never get the chance to make a persuasive pitch.

And remember... that *first* impression is the *lasting* impression.

You consult experts in styling your line, in designing your package, in planning your promotion,

even in laying out your letterheads.

Be equally scientific in presenting the first thing you have to sell... your salesman!

NOW the best way to *present* your salesman to your prospects and customers is as a well-dressed, well-groomed man of good taste.

And how easy it is! For a 'BOTANY' '500' suit, tailored by Daroff, has the ability in the fine fabrics, proper styling, correct colors and tasteful patterns to give a man the desired look of refinement and success.

Your 'BOTANY' '500' dealer is now ready to show you a program that helps your salesman to dress for success. Why not write today for the name and address of the dealer nearest you?

'BOTANY' '500'

Tailored by **DAROFF**

H. DAROFF & SONS, Inc., 200 Fifth Avenue, New York 10, N.Y. • 2300 Walnut Street, Philadelphia 3, Pa.

HERE'S TODAY'S BEST VALUE IN A COMPLETE DICTATING SYSTEM



IT'S A PORTABLE. Weighs only 6 pounds, is flashlight battery operated, needs no carrying case. Ready to go to work at the flick of its switch . . . anywhere.



IT'S A TRANSCRIBER. Transcription is easy, playback clear and true, with exclusive secretarial system. Recording discs mail in standard envelopes for only a 4¢ stamp.



IT'S AN OFFICE MACHINE. With big machine performance. Ideal for desk drawer dictation . . . gives you more usable desk top space.



IT'S A CONFERENCE RECORDER. Special transistor microphone faithfully picks up important interviews, conferences. Plastic discs are easily filed as permanent records.

Now, SoundScriber electronic pioneering brings you the ultimate in modern dictating systems—the all-purpose, transistorized battery portable. Here, in shaving-kit size, is the versatility of four machines in one (portable, office machine, transcriber, interview recorder). You also get performance surpassing that of machines twice its size, plus the economy of flashlight battery operation. And it's extra-rugged—built to travel. See how the new SoundScriber can help you get more done, with less stress, at lower cost. Ask for a demonstration of its versatility in your own office.

Send coupon today for full details.

Fill in, attach to your letterhead and mail to:
The SoundScriber Corporation, Dept. B-9
Box 1941, New Haven, Conn.

Please send information on the new, battery-powered, all-purpose portable.

NAME

TITLE

In a hurry? Just call your local SoundScriber dealer. He's listed in the yellow pages under "Dictating and Recording Equipment."

SOUNDSCRIBER

TODAY'S MOST ADVANCED DICTATING SYSTEM



Here are the reasons why...

Sylvania Fluorescents give you more light— *at lower cost than all other brands!*

Superior engineering makes Sylvania fluorescent lamps better in many important ways... makes every lamp a better tool of production and sales to increase your profits.

Today, good lighting is more than illumination... it is a basic tool of production and sales. Sylvania, with this important premise always at work, offers business and industry a complete line of modern fluorescent lamps that assures efficient lighting... provides performance that means maximum service from your present fluorescent lighting system, and a higher return on your investment in the illumination of offices, factories or stores.

Why Sylvania lamps are best

It takes many things to make better fluorescent lamps. That's why ordinary fluorescents cannot match Sylvania lamps for light output, lamp life and dollar-for-dollar lighting value.

The reason? Sylvania builds many important major features into fluorescents... all contributing to superior lamp service and greater lighting economy.

Check these many points of superiority. See for yourself why you get more and save more. Notice, too, that Sylvania makes its most important com-

parisons with other brands... not with Sylvania products of the past.

Sylvania fluorescent lamps are as much as 14% brighter

Tests in the laboratory and working installations demonstrate that Sylvania lamps consistently deliver more light.

Equally important, during the past two years, an actual comparison of Sylvania fluorescent lamp performance with that of other brands shows Sylvania to deliver as much as 14% more light, depending on the lamp type.

Thus, you get the maximum light you expect... all the light you pay for... from the start.

Sylvania's greater maintained brightness means 7 lamps free for every hundred you use

Sylvania fluorescents maintain their greater brightness throughout useful life. For example, at 3,000 hours, in a single-shift operation, 100 Sylvania lamps deliver the light output of about 107 ordinary fluorescents. In effect, you

get a dividend of light equal to 7 free lamps... more light-per-lamp from the power you pay for.

Sylvania welds all bases... eliminates faulty lamp contact

Sylvania welds the tube-to-base contact points in all its fluorescent lamps. Other brands use soldered contacts.

By welding, Sylvania completely eliminates the corrosion caused by soldering. Faulty lamp contact so common with ordinary fluorescents is eliminated. As a result, Sylvania fluorescents burn brighter far longer... save dollars and time in lamp maintenance.

Only Sylvania's exclusive coating process homogenizes phosphors for maximum brightness

Year after year, Sylvania lamps have delivered more light for a far longer time than ordinary fluorescents because of superior phosphors. In fact, only now are some other brands being introduced with phosphors of a quality which Sylvania has long since improved.



In addition, Sylvania uses an exclusive coating process which more uniformly distributes these superior phosphors throughout the tube. This unsurpassed uniformity is made possible by homogenizing the phosphors—and, in itself, contributes a minimum of 3% greater brightness over other processes now in use.

Sylvania lamps are 99.9% free of performance defects

Every lamp that leaves the plant is subjected to the infallible scrutiny of

electronic devices that test and inspect for every possible flaw. One unit, for example, is so critical it can detect, in a fraction of a second, a lamp leak that would otherwise not become apparent until after many months of use. In this way you are assured of the highest lamp quality and performance.

Revolutionary VHO—first lamp to give 250% as much light as a standard tube

The Sylvania VHO (Very High Output) lamp represents a major break-

through in fluorescent lighting. It produces 2½ times the light output without changing the size or shape of the tube.

The high intensity lighting "punch" of Sylvania's VHO offers new lighting levels that make it practical for the first time to gain the advantages of fluorescent lighting for High Bay installations, and for Outdoor illumination.

VHO lamps cost less to buy—less to use, and maintain greater brightness throughout life than other types of very high intensity fluorescents.

These facts are presented in the interest of demonstrating how better lighting is possible at a lower cost . . . how it contributes to increased production and working efficiency, and supports the many factors that reduce operating costs to improve profits.

We believe this concrete evidence of Sylvania's superiority in fluorescent

lighting deserves the serious consideration of every executive or purchasing authority.

If you are planning new lighting, or are about to buy fluorescent lamps for your present system, let us demonstrate why you cannot afford to buy anything but Sylvania Fluorescent Lamps. Call or write us today.

Signed,

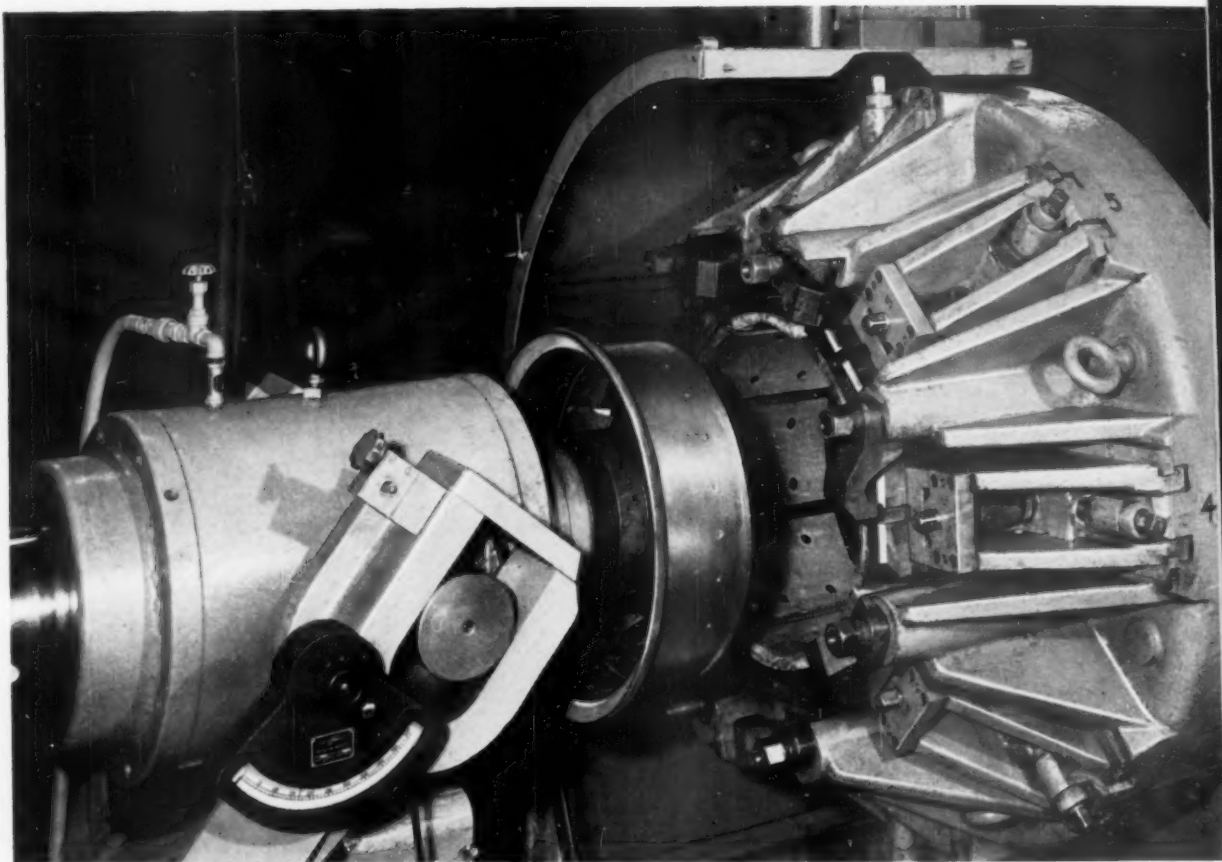
F. J. HEALY, President

SYLVANIA Lighting Products

A Division of SYLVANIA ELECTRIC PRODUCTS INC.

In Canada: Sylvania Electric (Canada) Ltd., Shell Tower Building, Montreal

Dept. 8L-1409, 60 Boston Street, Salem, Massachusetts



This fatigue life testing machine at The Budd Company, Detroit, puts steel products through a rugged workout. Here lightweight truck wheels of N-A-X HIGH-TENSILE steel are

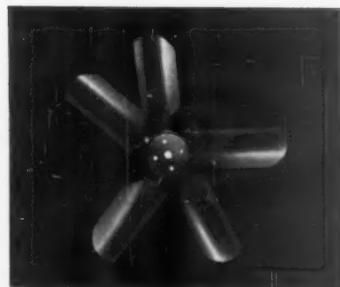
subjected to constant flexing, hour after hour. Tests like this prove N-A-X HIGH-TENSILE adds fatigue life, permits sizable weight reductions.

For whatever you make . . .

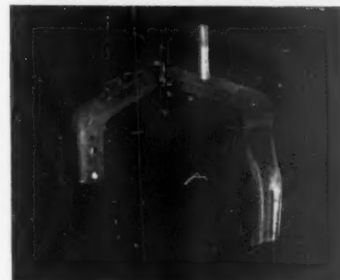
N-A-X[®] HIGH-TENSILE STEEL
ADDS GREATER FATIGUE LIFE
plus excellent formability—
weldability—toughness



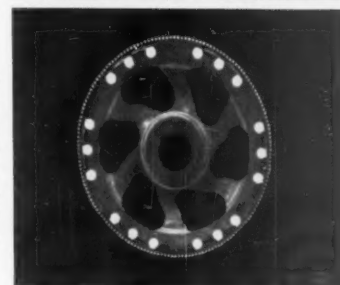
Rotating speeds and vibrations create excessive fatigue in engine fan blades. With its superior fatigue resistance, N-A-X HIGH-TENSILE is specified in many fan constructions.



Because high fatigue resistance is a critical requirement of motor mounts, N-A-X HIGH-TENSILE is specified by leading manufacturers.



Under simulated field conditions, fatigue life tests proved flex plates made of N-A-X HIGH-TENSILE lasted up to ten times longer than those made of carbon steels of the same gage.



The trucking industry and its suppliers have always looked for ways to build trucks lighter for bigger payloads, without sacrificing durability and strength.

The Budd Company found that with N-A-X HIGH-TENSILE steel, wheel weight could be cut substantially *with no loss* in fatigue life. Long experience proves that despite their lighter weight, N-A-X HIGH-TENSILE truck wheels stand up, take stress and flexing mile after mile.

The Budd Company also found that along with greater fatigue life, weight for weight, N-A-X HIGH-TENSILE offers important advantages in manufacturing. N-A-X HIGH-TENSILE welds and forms readily. And just as important for Budd customers, N-A-X HIGH-TENSILE because of its toughness resists impact to an exceptionally high degree.

CHECK THESE IMPORTANT ADVANTAGES FOR YOUR JOB:

N-A-X HIGH-STRENGTH steels—both N-A-X HIGH-TENSILE and N-A-X FINEGRAIN—compared with carbon steel, are 50% stronger • have high fatigue life with great toughness • are cold formed readily into difficult stampings • are stable against aging • have greater resistance to abrasion • are readily welded by any process • offer greater paint adhesion • polish to a high luster at minimum cost.

Although N-A-X FINEGRAIN's resistance to normal atmospheric corrosion is twice that of carbon steel, N-A-X HIGH-TENSILE is recommended where resistance to extreme atmospheric corrosion is important.

For whatever you make, from steel shop boxes to steel wheels, with N-A-X HIGH-STRENGTH steels you can design superior performance, longer life and less weight into your products. Let us show you how.



Product Development Division, Dept. BW-7

GREAT LAKES STEEL CORPORATION

Detroit 29, Michigan • Division of



Product Development Division, Dept. BW-7

Great Lakes Steel Corporation, Detroit 29, Michigan

☐ Please send me 12-page illustrated technical catalog on N-A-X HIGH-STRENGTH steels.

☐ Please have your representative contact me.

Name _____ Title _____

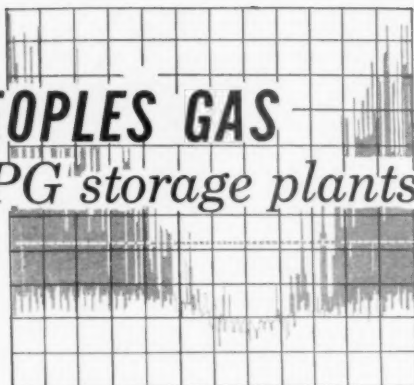
Company _____

Street _____

City _____ Zone _____ State _____

SHAVING PEAKS AT PEOPLES GAS

with Pritchard's LPG storage plants



Just a row of pipes. That's all you can see of the LPG peak shaving plant J. F. Pritchard & Co. has built for The Peoples Gas Light and Coke Company at its Calumet terminal. Yet, insignificant as it may appear, this plant and another Pritchard has installed at the company's Crawford terminal have added 2,400,000 gallons of underground capacity to the LPG storage systems operated by this Chicago utility.

Pritchard has built more than 80 peak shaving plants with a capacity of over 40,000,000 gallons of LPG for firms all over the country. Other Pritchard specialties for the gas industry: compressor stations, dehydration plants, gas conditioning and treating plants.

But Pritchard specializes in more than the mere construction of facilities. Pritchard has the

experience and staff to render a complete service—from the planning stages to the final construction of a turnkey job. Economic surveys, preliminary engineering, and procurement are examples of the range of services Pritchard offers.

Regardless of the size of your next job—if it's in the gas industry—it will pay you to talk to Pritchard.

INDUSTRY'S
PARTNER FOR
PROGRESS

J. F. Pritchard & Co.

ENGINEERS • CONSTRUCTORS

Dept. 408, 4625 Roanoke Parkway, Kansas City 12, Mo.

OFFICES IN CHICAGO, HOUSTON, PITTSBURGH, NEW YORK
SERVING THE GAS, POWER, PETROLEUM AND CHEMICAL INDUSTRIES

AS GOOD AS GOLD THE WORLD AROUND



AMERICAN EXPRESS

INVITES YOUR APPLICATION FOR THE COMPREHENSIVE
CREDIT CARD



Look for this sign

NOW FOR THE FIRST TIME A CARD THAT COVERS ALL THESE SERVICES

Transportation. Air, rail, steamship, bus tickets purchased through 400 American Express offices, world-wide. Tours, cruises, sightseeing, too!

Accommodations. Rooms, meals and other facilities at fine hotels, motels and resorts throughout the world.

Dining and entertainment at fine restaurants, inns, night clubs.

Car rentals at car-rental agencies and through American Express.

Flowers, candy, gifts, telegrams, cables and other facilities.

One American Express Credit Card permits you to charge all these services. The fee is only \$6.00 a year. Additional cards for business associates or family cost \$3.00 per card if billed to the same account.

To receive your application, fill out, detach and mail coupon today. Or inquire at your bank.

.....
American Express Company 96
Credit Card Department
Box 1885, Church Street Station, New York 8, N. Y.
.....

Please send me an application for an American Express Credit Card.
.....

Name.....

Address.....

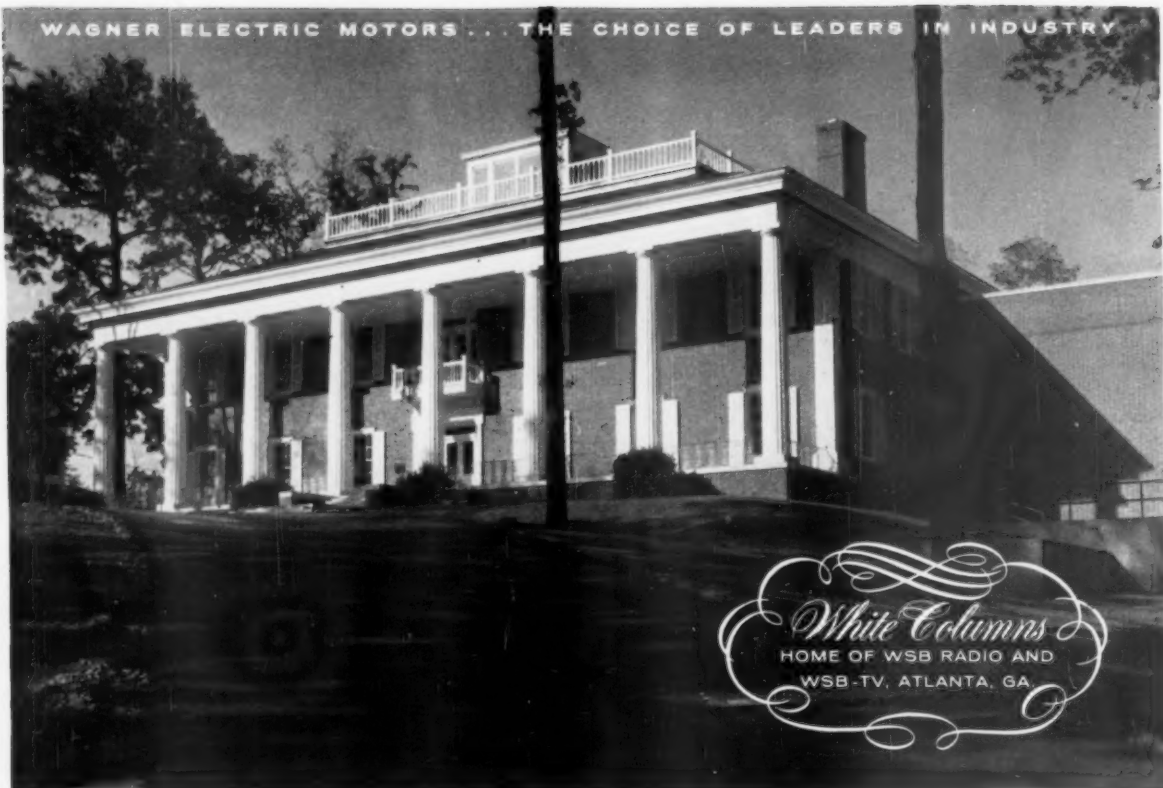
City.....Zone.....

State.....
.....

AMERICAN EXPRESS COMPANY

TRAVELERS CHEQUES ★ TRAVEL SERVICE ★ MONEY ORDERS ★ FIELD WAREHOUSING ★ OVERSEAS COMMERCIAL BANKING ★ FOREIGN REMITTANCES ★ FOREIGN TRAFFIC

WAGNER ELECTRIC MOTORS... THE CHOICE OF LEADERS IN INDUSTRY



COMBINING THE CHARM OF THE OLD SOUTH WITH ULTRA-MODERN COMFORT

THE new \$1,500,000 home of WSB Radio and WSB-TV houses offices, radio and TV studios, laboratories and a theater. All are kept comfortably cool by an effective air conditioning system with a total cooling capacity of 175 tons.

The air conditioning equipment is broken up into relatively small units in order to give flexibility to the control of the system. Six Wagner increment start type motors, ranging from 20 to 40 hp, drive the compressors for this system.

Wagner Increment Start Motor Combinations were chosen because they start compressor loads smoothly, and with a minimum of voltage drop and line disturbance. They fully meet the polyphase motor starting recommendations of AEIC-EEI-NEMA.

For more information about these Wagner motor-starter combinations, and how they solve big motor starting problems at *low cost*, call the nearest of our 32 branches, or write for Bulletins MU-128 and MU-195.

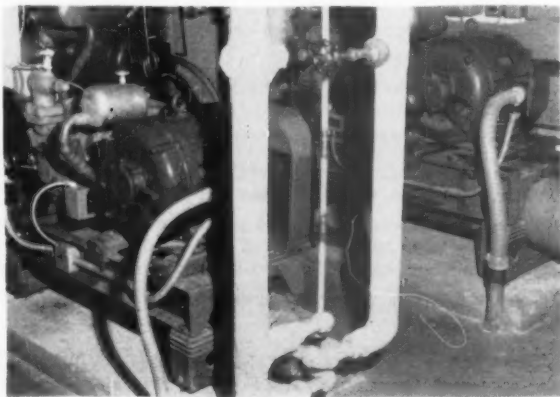


Here is the heart of WSB's flexible air conditioning system. The 20 hp Wagner Motor in the foreground powers equipment to cool the office zones, the 40 hp motor in left background drives the compressor for the TV studios, and the 30 hp motor at right handles cooling for the lobby and second floor. Three additional motors, not shown here, complete the installation.

Wagner builds electric motors in ratings to 1000 hp.

Wagner Electric Corporation
6460 PLYMOUTH AVENUE, ST. LOUIS 14, MO., U.S.A.

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES



Zippo lighter Christmas catalogue of business gifts—1958

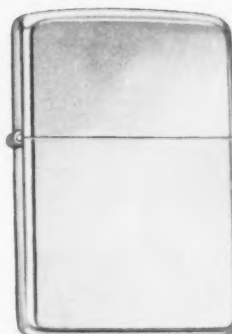
Give the Regular Zippo

The lighter that made Zippo famous around the world. In brush-finish chrome. Guaranteed to work or we fix it free.



Give the Zippo De Luxe

Finished in highly polished chrome for a sparkling business gift. Backed by Zippo's famous unconditional guarantee.



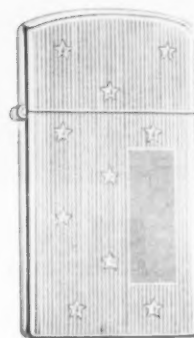
Give the Zippo Chrome Slim-Lighter

Elegant new slim shape, same dependable action. High polish chrome finish. Guaranteed by Zippo. A lifetime gift for man or woman.



Give the Zippo Golden Slim-Lighter

The ultimate gift. 10-carat gold-filled—not just plated. Slim shape in rope, scroll or star design. Guaranteed by Zippo.



THESE ARE just a few of the many lighters in the Zippo gift line. Whichever Zippo you give will be remembered for a lifetime because if it ever fails to work—we will fix it free!

What's more, Zippos can now be engraved with individual signatures to further enhance the personal value of your gift. This is an exclusive Zippo service.

Zippo also provides a complete gift package. It includes flint, fuel and a choice of gift labels.



ZIPPO®

THE LIGHTER THAT WORKS

ZIPPO MANUFACTURING CO., BRADFORD, PA. • IN CANADA:
ZIPPO MANUFACTURING CO., CANADA LTD., NIAGARA FALLS, ONT.

**Zippo Manufacturing Company,
Dept. BW-269, Bradford, Pa.**

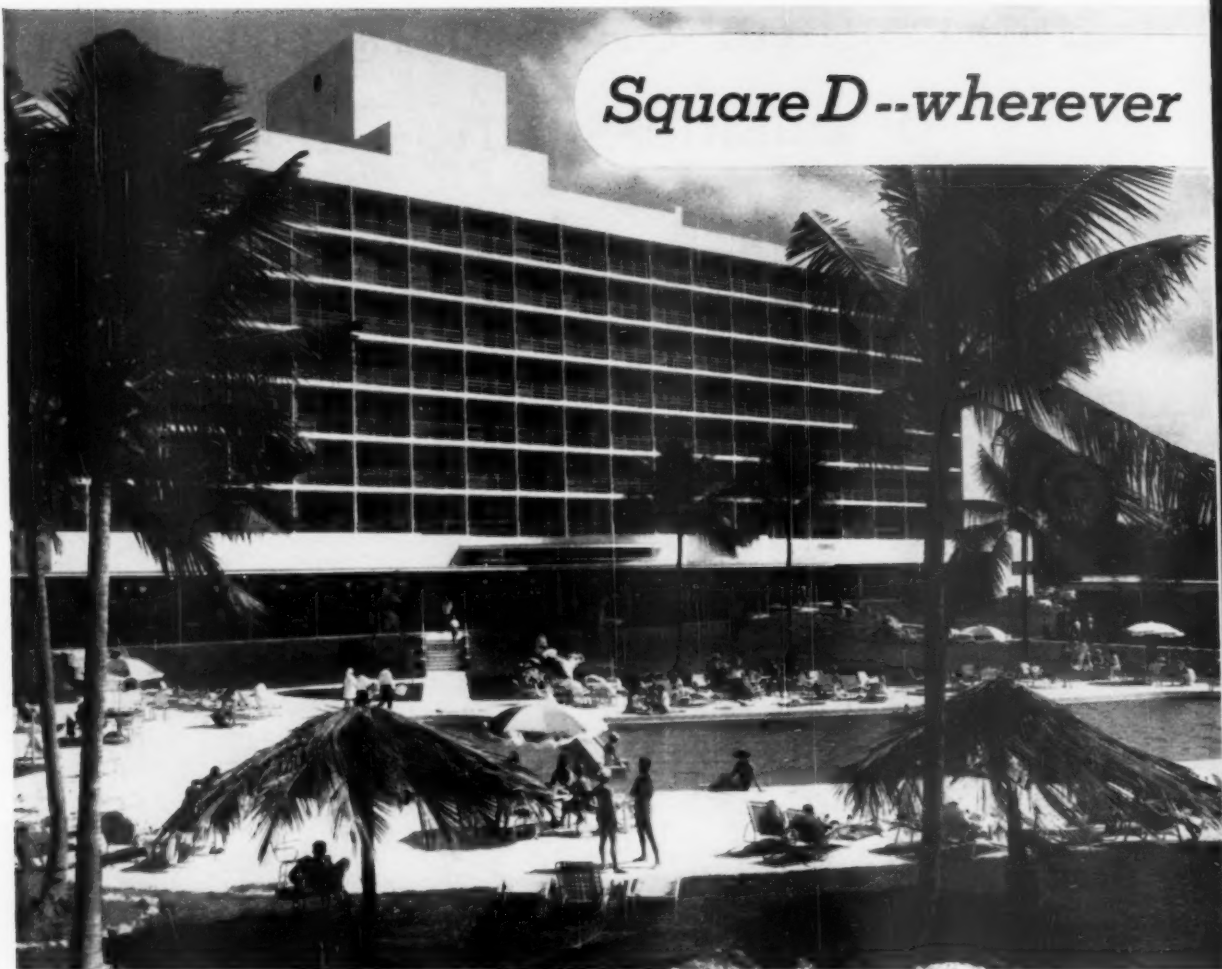
Gentlemen: Please furnish us with complete information on how Zippo lighters and Zippo's design and personalizing service can solve our company gift problem.

Name

Position

Firm

Address



EL SAN JUAN INTERCONTINENTAL*

• Here is one of the Caribbean's most beautiful tourist and resort hotels. Built at a cost of \$7,500,000 and operated by Intercontinental Hotels, New York, it stands on a 16-acre ocean-front tract between the center of San Juan and the International Airport. Each of the hotel's guest rooms has an individual balcony overlooking the beach and ocean. Within the completely air-conditioned hotel are restaurants and the *Tropicoro* night club and casino, the latter created by Max Borges, Jr., designer of Havana's famed

Tropicana. The hotel's convention hall and ballroom, with a floor area of 12,000 square feet, can accommodate 1500 people. *Square D* equipment distributes and controls the electricity throughout this beautiful structure.

FIELD ENGINEERING SERVICE is available through more than one hundred *Square D* offices, backed by an international network of over 1000 authorized electrical distributors and 17 plants in the United States, Canada, Mexico and Great Britain.

Executive Offices • 6060 Rivard Street, Detroit 11, Michigan

*Designed by ROY F. FRANCE & SON, Miami Beach, Florida, and G. FERNOS LOPEZ, Consulting Architect, San Juan, P. R.
Electrical Contractor • COMMONWEALTH ELECTRICAL CONSTRUCTION, INC., San Juan, P. R.



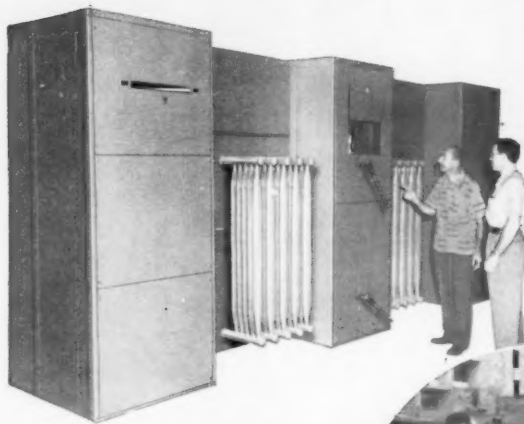
EC&M HEAVY INDUSTRY ELECTRICAL EQUIPMENT...NOW A PART OF THE SQUARE D LINE

SQUARE D COMPANY

electricity is distributed and controlled



This **SQUARE D CONTROL CENTER** centralizes all motor control for units which air-condition the lobby, foyer entrances, offices, dining rooms, cocktail lounge, night club and casino. Pumps for chilled water system and swimming pool are also controlled from this center. **SQUARE D totally enclosed FEED-IN DUCT** brings power from substation.



Two **SQUARE D SUBSTATIONS** (one shown at left) separately feed power and lighting and small appliance loads for the entire hotel. **SQUARE D ALUMINUM FEED-IN DUCT** distributes the hotel's electrical power. Two vertical risers feed all eight floors.

Sager Colman, Square D Export Manager, discussing electrical equipment installations with Harley Watson, General Manager of El San Juan Intercontinental Hotel, during early construction stage.



A *Complete* LINE OF ELECTRICAL DISTRIBUTION AND CONTROL EQUIPMENT

ADJUSTABLE SPEED DRIVES
BUSWAYS & WIREWAYS
CIRCUIT BREAKERS
CONTROL CENTERS
CRANE & HOIST CONTROL
DISTRIBUTION SWITCHBOARDS
ELECTRIC TRUCK CONTROL
HIGH VOLTAGE CONTROL
LAUNDRY CONTROL
LIFTING MAGNETS
LIGHTING AND POWER PANELBOARDS
LIGHTING CONTROL — LOW VOLTAGE
LIMIT AND FOOT SWITCHES
MACHINE TOOL CONTROL
MAGNETIC BRAKES
METER MOUNTINGS
MOTOR STARTERS
PRESS CONTROL
PRESSURE, FLOAT, & VACUUM SWITCHES
PUSHBUTTONS
RELAYS AND CONTACTORS
RESISTORS
SAFETY SWITCHES
SERVICE ENTRANCE EQUIPMENT
STAGE DIMMERBOARDS
STEEL MILL CONTROL
SWITCHGEAR & UNIT SUBSTATIONS
SYNCHRONOUS MOTOR CONTROL
TERMINAL BLOCKS
TEXTILE MACHINE CONTROL
TIMERS
VOLTAGE TESTERS
WELDER CONTROL



(Advertisement)

FLORIDA...

U.S. AIR FORCE PHOTOGRAPH



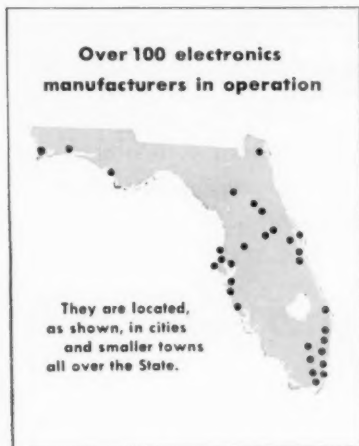
its place in the electronics-missile age

Site of satellite launchings...over 100 electronics manufacturers in operation...more than 50 companies producing aircraft and aircraft parts...top choice, by actual record, of engineers and skilled technicians.

Thor, Bomarc, Snark, Vanguard, Atlas, Jupiter—every time another giant projectile lances skyward from the Cape Canaveral test launching pads Florida demonstrates anew its missile-age dominance.

Electronics' place in the sun

This "Space Capital, U.S.A." is making spectacular gains in America's newest industrial field. Almost overnight, Florida has attained top status in the Southeast in electronics manufacturing. Sperry-Rand Corp., for example, began klystron tube production at Gainesville in 1954. Its original labor force of 80 (60,000 square feet) has jumped to over 400 (96,000 square feet) ... and plans are under way for a further expansion to 160,000 square feet by 1960. Still another Sperry facility recently opened in Oldsmar—a \$2 million research laboratory working on microwave instrumentation, research, and ferrites.



Florida's missile and electronics-related industries: their annual business volume tops \$150 million.

Actually, the electronics industry is putting down deep roots all over the Sunshine State. Over 100 manufacturers are at work in avionics, marine communications, missile tracking and computing, and industrial control and instrumentation ... with corollary rapid growths in components and sub-contracting. Typical case histories:

4Cape Canaveral is a dramatic symbol of Florida's leadership in the electronics-missile age.

Martin Co., Orlando—Currently working on guided missiles and Missile Master control systems. New \$27 million plant advertised for engineers, technicians, top executives, received a flood of qualified applicants from all over the country—mirroring the experiences of countless other Florida firms.

Radiation, Inc., Melbourne—From modest beginnings in 1950, has grown to nine plants employing over 700 technicians and engineers. Primary work: antenna and telemetry research, plus participation in the "Tall Tom" electronic reconnaissance system contract.



Florida boasts a veritable "Who's Who" in the missile-aviation-electronics world.

Others with comparable growth stories: Minneapolis-Honeywell, St. Petersburg; Electro-Mechanical Research, Sarasota; Electron-Machine, Umatilla; Milgo Electronics, Miami. These, as do others, report five basic factors favorable to healthy growth here: proximity to Cape Canaveral, climate that attracts skilled man-power, good labor market, decentralization advantages, nearness to Latin American markets.

Air hub—in more ways than one

Florida is aviation-minded, too. Commercially, the State is served intensively by such domestic airlines as Eastern, Delta, National, Northeast, and newly-arrived Northwest Orient, TWA, and Capital ... plus a host of international carriers.

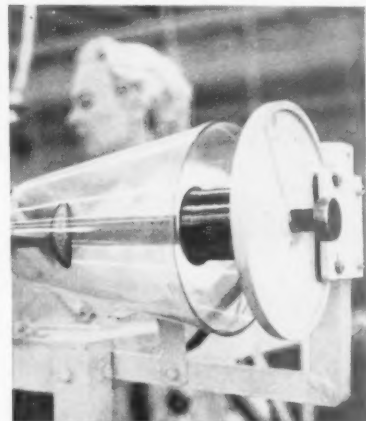
Aircraft maintenance, including telecommunications and electronics, is a flourishing field. Overhaul operations of Aerodex, Inc., in Miami are virtually on an "assembly line" basis. Here, too, four major airlines are building or planning to build giant bases for jet aircraft overhaul.

Over 50 Florida firms are engaged in various phases of aircraft testing and manufacture. Pratt & Whitney, for instance, has a vast jet engine testing facility near West Palm Beach. The company reports excellent labor recruiting and contracting experience, plus wholehearted community cooperation.

MORE FLORIDA DATA: Nuclear research and development proceeding apace, aided by a 1957 legislative appropriation of \$5,200,000 ... company after company reporting tremendous opportunities for sub-contractors ... no state income taxes ... permanent population increasing by more than 16,000 a month ... 1957 building permits up 22% in number over 1956.

Florida facts, figures ... and surveys

The Industrial Services Division of the Florida Development Commission has prepared all-new factual studies on Markets, Manpower, Taxes, Transportation, Resources, Living Conditions, Research, Power and Water. These studies are available to you at your request.



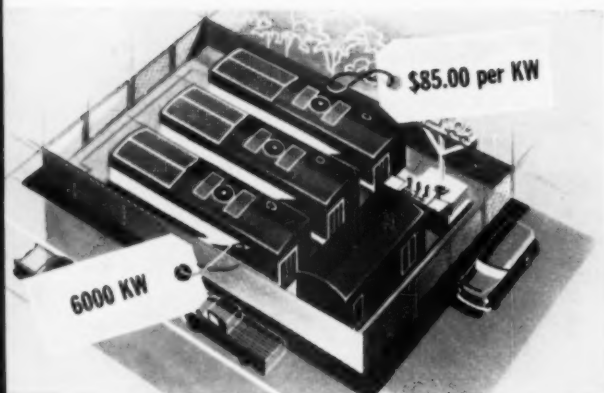
Merit Coil & Transformer Co., world's largest independent manufacturer of transformers, recently moved its complete plant from Chicago to Hollywood, Fla.

In addition, the Industrial Services Division will gladly conduct special studies and assist in selecting sites. All inquiries are held in strictest confidence. Write today to B.R. Fuller, Jr., Executive Director, Florida Development Commission, 3803-3 Caldwell Building, Tallahassee, Florida.

Come see Industrial Florida for yourself. Write State of Florida, Dept. C, Caldwell Bldg., Tallahassee, for new 100-page color Vacation Guide Book to help plan an all-Florida tour.

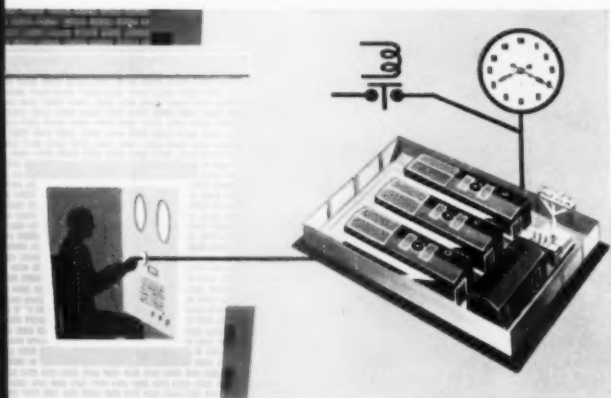
Electro-Motive 6000 KW

Product facts for your peaking plans—



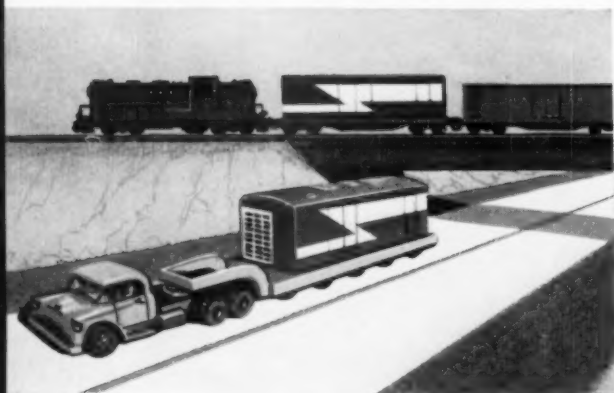
6000 KW at \$85.00 per KW*

To perform economically its intended function, peaking equipment must naturally be low in original cost. Electro-Motive equipment meets this cost requirement. *F.O.B. Factory.



Unattended operation

The 6000 KW Peaking and Reserve Plant operates completely unattended. An electrical impulse is all that is needed—from a time clock, dispatcher, current or voltage sensing equipment or a combination of these methods.



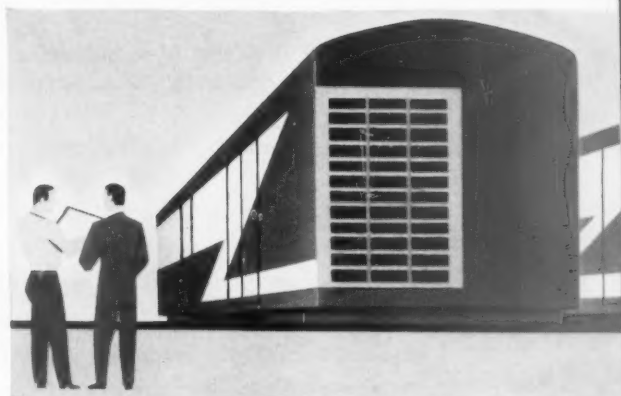
Readily transportable

The Electro-Motive Peaking and Reserve Plant is handled much the same way as many transformers. Components are shipped on standard rail cars or highway equipment.

Peaking and Reserve Plant

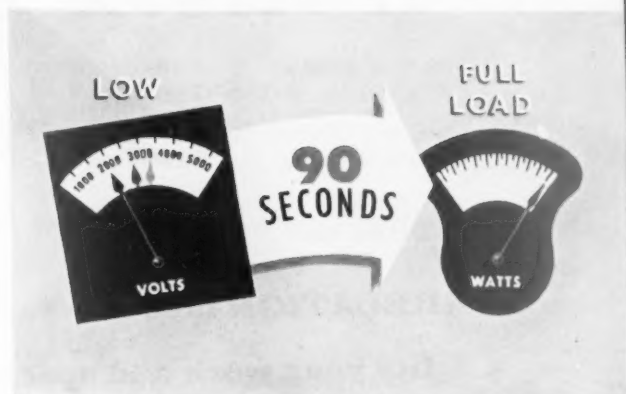
Quiet operation

Silencing arrangements are included to fit the varying conditions under which Electro-Motive Power must operate. Thus considerable freedom can be exercised in location of the equipment.



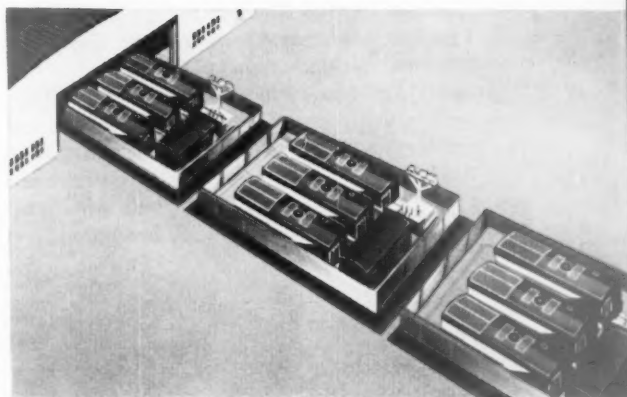
Quick start

The Electro-Motive Peaking and Reserve Plant starts instantaneously. In a matter of seconds it is on the line at full rating, thus fulfilling the requirement for spinning reserve.



One manufacturer

Electro-Motive Peaking Plants are designed, engineered, manufactured and serviced by Electro-Motive. There is only *one* manufacturing responsibility for the complete plant—starting from fuel input to power output.



ELECTRO-MOTIVE DIVISION • GENERAL MOTORS

LA GRANGE, ILLINOIS Sales-engineering offices: Chicago, New York, St. Louis,

San Francisco In Canada: General Motors Diesel Limited, London, Ontario





IT FITS . . .

Just as
CORRELATION modular furniture
fits your work and space needs

Now you can create a custom furniture group to fit your needs exactly . . . at far less than custom furniture cost. *Correlation* modular furniture design makes it possible . . . and practical, too.

Actually, *Correlation* furniture means flexibility plus! Get just what you need initially . . . or, add tops and service units to basic desks to create an endless variety of money-saving and space-saving arrangements. This flexibility, plus modern style and wide color selection, makes *Correlation* the best choice of all! • For help with your problems . . . send today for new full-color *Correlation* brochure. Corry-Jamestown Corp., Corry, Pa.



CORRELATION BY
STEEL AGE

BUSINESS OUTLOOK

BUSINESS WEEK

SEPT. 27, 1958



Cost-of-living figures may hold about steady for a couple of months. But it isn't wise to expect August's decline (page 139) to be extended.

Seasonal declines in many foods have been the moderating factor since late spring. But meat prices, a very large item, show little sign so far of going into any fall-and-winter dive.

Food prices were steady to a shade higher at wholesale between Aug. 15 and Sept. 15 (the date for the Bureau of Labor Statistics' checkup in compiling its monthly Index of Consumer Prices).

Most other cost-of-living items—notably the cost of housing and services—seem to exert a pretty consistent upward push.

Thus it's hard to see how the September c-of-l can go down much.

Cost of the consumer's market basket hasn't really declined much from the peak, judged by either wholesale or retail food prices.

Farm prices, on the other hand, have dropped about 7% since spring.

This, you may be sure, is going to add venom to the old fight over what's happening to the farmer's share of the consumer's food dollar.

Consumers are running costs up on themselves, as all grocers know. They demand more processing and packaging—and they have to pay for it.

We eat the same amount of potatoes, per capita, as 20 years ago. But now 20% of our spuds are processed—chips, frozen french fries, dehydrated, canned—against only 2% in 1940.

Per capita consumption of commercial vegetables is up sharply—but the whole increase is being eaten in processed form. Canned tomatoes and tomato products and frozen peas show the really big gains.

Meat eaters may look forward to 1959 for larger supplies and, quite possibly, substantially lower prices.

There's a little more meat this year than last. But most of the rise in livestock numbers is in brood stock—animals subtracted from this year's slaughter but whose get will be added in years to come.

Record supplies of animal feed and fairly good slaughter prices have been giving livestock raisers pretty satisfactory profits. (It's the old corn-hog ratio making itself felt in the time-honored way.)

This encourages increases in breeding stocks for more meat output.

In fact, a downtrend in the cattle cycle has been reversed much more quickly than would normally be the case. And hog breeding this fall promises to exceed last year's by about 17%.

Seasonal declines have carried prices of both steers and hogs down \$4 to \$5 a cwt. from the highs earlier this year. However, quotations at stockyards still are higher than they were a year ago, and prices a year ago were considered pretty fair for the time of year.

In fact, prices have improved a bit in the last two or three weeks—at a time when the autumn decline normally is on.

BUSINESS OUTLOOK (Continued)

BUSINESS WEEK

SEPT. 27, 1958

Manufacturers can't be blamed for much of this year's rise in consumer prices—for all the talk of the wage-cost spiral.

In fact, the wholesale price index now is **almost exactly where it was last January** for all items other than farm products and foods.

It is true, nevertheless, that the index has edged up recently (just enough, in fact, to erase the small decline earlier in the year).

You might be surprised by the **performance of prices for many manufactured products** if you don't follow them closely:

- **Industrial chemicals** in August were at the lowest average level in over a year and a half. Almost all the dip since June can be traced to the cuts in ammonia, benzene, and xylene.
- **Plastics components** average lower due to the price reductions since June in vinyls and general purpose phenolics.
- **Metalworking machinery** prices have declined since January, though more customer inquiries now are bringing reports of some stiffening.

—•—

Steel scrap prices could go a lot higher in the next few months—but there are a couple of very big "ifs" involved:

If steel mill operations rise substantially from the present level.

If ore piles are eaten into dangerously before spring.

The first factor, of course, leads into the second. And, to be on the safe side, steel mills are pushing now to **get ore down the Lakes before the freeze.** (They took it a little easy early in the season)

—•—

Zinc and lead, in common with the other nonferrous metals, will have to rely pretty largely on industrial demand for price improvement

The new import quotas will be of little immediate help.

The reason for this is simple: The problem in both zinc and lead remains one of too much metal above ground. That has been complicated in the past by cheap imports; these now will be reduced (but not eliminated). And the problem of metal already piled up by domestic mines remains.

Producers of zinc and lead in this country aren't looking a gift horse in the mouth; they're slow to criticize the import quotas.

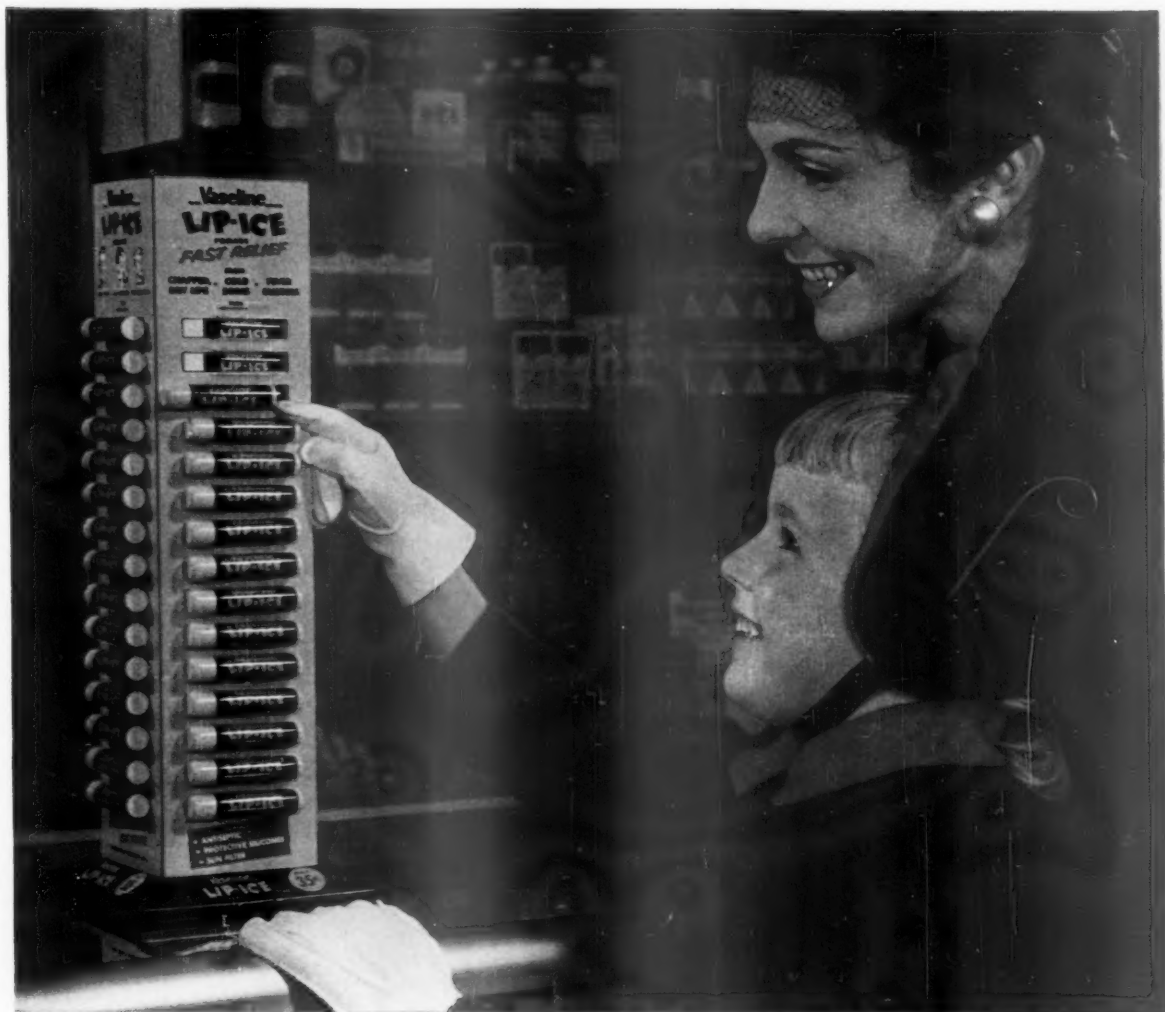
Many in the trade, however, still hold **more long-range hope for the study group that will meet next month** to consider international commodity agreements for zinc and lead.

A committee will meet, that is, if all major producers cooperate.

There's a sneaking suspicion among U.S. miners that the **new quotas are designed to force lagging foreign producers to take part**—and that the quotas may be rescinded if international controls are adopted.

One favorable sign for nonferrous markets may be seen in the way **copper and aluminum already are responding to industrial improvement.**

Domestic output of both metals again is rising. Moreover, refiners' stocks of copper have declined a bit in each of the last three months.



Self-Service merchandising display fabricated for Chesebrough-Pond's Inc., N.Y., by Eden Plastics Corp., New York, N.Y.

Self-Service

gets a boost from Kodapak Sheet

Easier now than ever for people to buy "Vaseline" Lip-Ice, product of Chesebrough-Pond's Inc., N.Y.!

Pre-formed loops of transparent 20 mil Kodapak Sheet attached to the four sides of a special counter merchandising column hold 60 Lip-Ice sticks. (No need for printing on the loops, the printing on the container shows right through!)

Shoppers recognize the merchandise, stop, obey the impulse, and *help themselves!*

Why did the display's producer use Kodapak Sheet?

Because Kodapak Sheet is tough and durable, the display is assured of lowest effective cost.

Because Kodapak Sheet is clear as crystal, "Vaseline" Lip-Ice sticks exert maximum sales appeal.

Because Kodapak Sheet is stable, uniform in gauge and width, it is easy and economical to work with.

For further information about this and other applications, call our representative or write:

**Cellulose Products Division
EASTMAN KODAK COMPANY, Rochester 4, N. Y.**

Kodapak Sheet

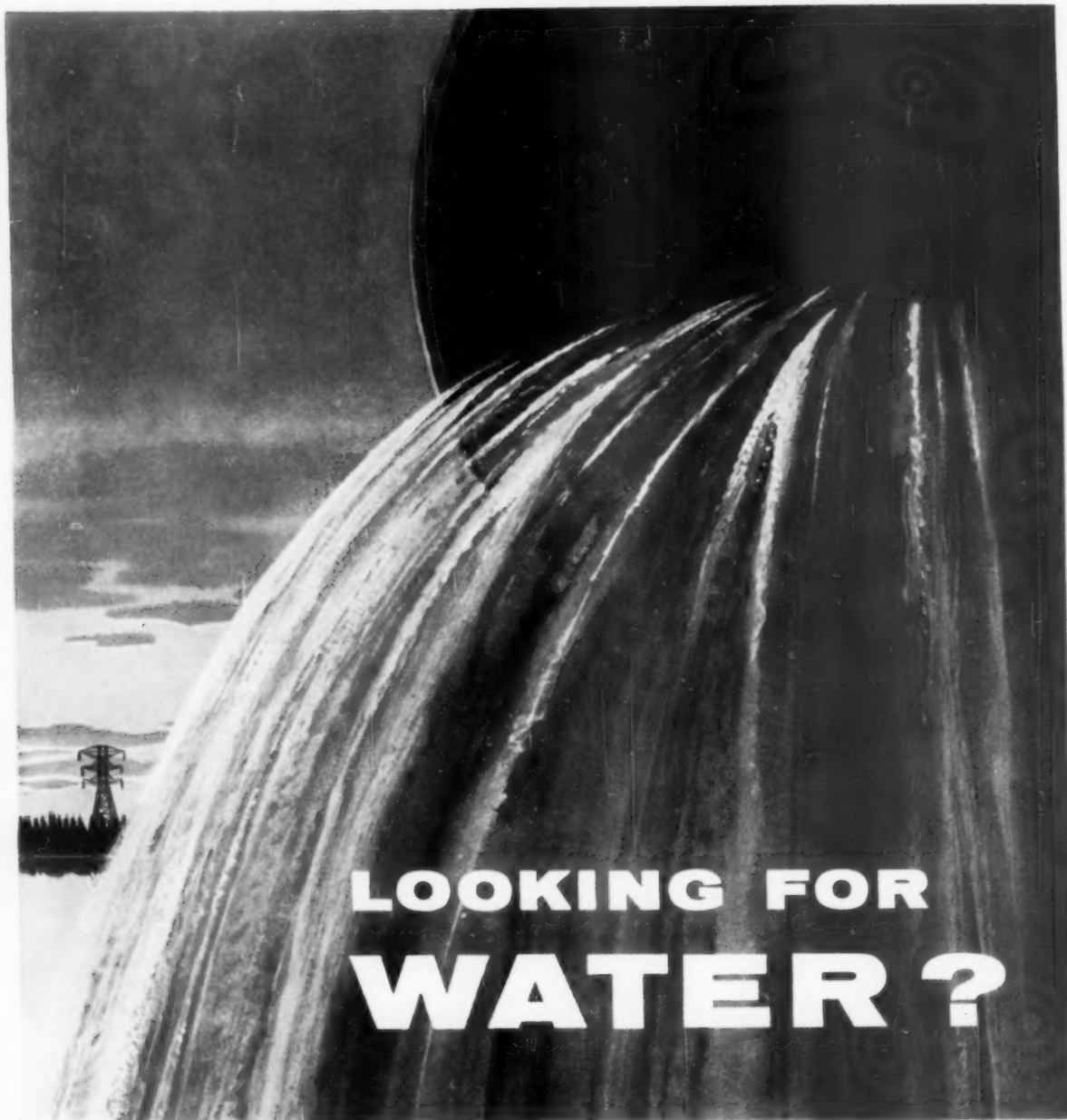
"Kodapak" is a trademark for Eastman's plastic sheet

MAKES GOOD PRODUCTS SELL BETTER

"Vaseline" and Lip-Ice are registered trademarks of Chesebrough-Pond's Inc.

Sales Offices: New York, Chicago, Atlanta. Sales Representatives: Cleveland, Philadelphia, Providence.

Distributors: San Francisco, Los Angeles, Portland, Seattle (Wilson & Geo. Meyer & Co.); Toronto, Montreal (Paper Sales Ltd.).



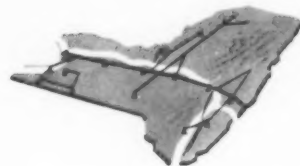
LOOKING FOR WATER?

COME TO "UPSTATE, N.Y."

new market place of the world

Plentiful water is vital to industrial growth and expansion. You'll find it in abundance in Upstate, N.Y.'s lakes, rivers and year 'round high water table.

Other important benefits here include superb transportation, overnight nearness to the largest markets in the United States and Canada, skilled labor, and plentiful Niagara Mohawk power, at low rates. For illustrated fact booklet and more information, write Industrial Development Department, Niagara Mohawk, Dept. B-9, Syracuse 2, N.Y.



POWERED BY
**NIAGARA
MOHAWK**

NIAGARA  MOHAWK

Employers Begin to Talk Tough

The auto makers' firm stand against the UAW cinches a rapidly spreading trend to a new sort of bargaining.

Employers who still have to go to union bargaining tables this year—and there are hundreds of them—are breathing more easily this week.

Detroit auto makers have checked labor's strongest bid of 1958 for big wage and fringe gains. And the bargaining in Detroit had been the key to whether unions would score another costly breakthrough this year.

Other unions have been staying on the sidelines, ready to follow through on whatever the powerful United Auto Workers might win. But auto's Big Three resisted stubbornly. In the end, UAW could claim gains (page 133), but auto management balked the union's bid for anything big and new.

What makes this result especially significant for other companies is that the achievement was the outcome of a new and tougher style of bargaining that is now spreading rapidly through industry (page 184).

• **Recession**—In part, of course, it was general business conditions that held settlement terms down; UAW was dealing with a hard-hit industry at a time when recovery was only getting under way. But it was more important that the union faced—for the first time—Big Three negotiators brought together in bargaining collaboration.

The suspicions and rivalries that kept the companies apart in past negotiations were put aside. At least for the duration of the talks with UAW, ranks were closed. A common need to slow if not halt the rise of auto labor costs brought them together.

I. How Unity Worked

Recognition of a need to curb costs is universal in business circles today. So the Big Three-UAW tussle was kept in sharp focus in management offices across the country for close to six months.



Particularly, the auto industry's negotiating tactics held attention. They were a change from the past. In many ways, the strategy seemed to follow the general lines of "Boulwarism"—the General Electric Co.'s controversial but singularly successful bargaining policy. It very obviously did follow, consciously or not, the pattern of steel

bargaining in 1956. It unquestionably was less flexible than in the past.

What happens when a powerful union bumps into a solidified industry bargaining position? Now management has an answer from Detroit: The industry position was dented, but the union momentum was checked.

• **Impact on Bargaining**—All this is

sure to have long-term effects, of some sort, on bargaining. The test this year was strongly influenced by the economy. In another year, with business booming, entirely different factors would be at work. But, for 1958 and very probably until the steel negotiations of 1959 provide another test, management can find guidance in auto bargaining.

Despite John L. Lewis' moves for \$1.20-a-day increases for his soft coal miners, industry hopes for continued moderate wage settlements on into early 1959. And it's giving serious thought to an auto industry strategy that may be called "Boulwarism" in union publications, but wasn't—exactly.

II. What "Boulwarism" Is

Ten years ago, Lemuel R. Boulware, a newly designated vice-president of General Electric Co., introduced the pattern of bargaining that now carries his name: "Boulwarism." GE has adhered to it ever since.

- **Union Criticism**—To most unions, "Boulwarism" is an anti-labor policy. They criticize it, usually intemperately, as a policy that ignores the requirements of bargaining in good faith.

Many employers, for that matter, are skeptical of "Boulwarism" as a negotiating policy. They are willing to concede that it has worked successfully through the years for GE. But, they ask, would it work equally well for companies that must deal with stronger unions or that can't afford the risk of a long strike?

- **The Concept**—"Boulwarism" is not wholly the bargaining conception of the man whose name it bears. It's a GE executive policy, and it is continuing despite the partial withdrawal of Boulware from negotiating responsibilities.

What is "Boulwarism?" Ideas vary, but here's what Boulware himself says is involved:

"The determining bargaining" is done in the press well ahead of arrival at the so-called bargaining table. Unions make their case there. So must employers.

At the start of bargaining, the employer should place before the union (and in the hands of every employee) an offer that "ought always to include everything the employer honestly thinks should be offered as the equitable (not political or horse-trading) thing to do." Changes should be made in the offer only "on the basis of information received from any source that the change should be made to serve the balanced interests of all concerned."

Changes should never be made because of force, even if it means taking a strike. And they should never be made to "make a union leader look better," according to Boulware.

- **Tough Attitude**—In a large part of industry, greatly concerned over "inflationary" or "give away" bargaining

with unions year by year, there's a growing determination to get tough. Probably not many employers will adopt "Boulwarism" in an outright way, but there's strong evidence that the GE program will be increasingly important as an influence at bargaining tables for as long as labor costs are the worrisome factor that they are now.

It happened in the steel industry in 1956 and in the auto industry this year.

III. Steel in 1956

Basic steel negotiators were accused by the union of following "Boulwarism" in 1956, but the industry's Big Three—and Boulware—denied that the steel-makers' policy was exactly that.

Reviewing the negotiations of two years ago, an industry source said this week that "broadly speaking," the steel pattern of bargaining did parallel that of GE.

- **What Happened**—The industry (1) served a 60-day notice terminating contracts with USW, the first time it had ever done this in bargaining; (2) offered settlement terms and stuck with them until late in negotiations, when the companies simply proposed a shorter contract term with a corresponding reduction in the value of the settlement; (3) took a strike to back its settlement proposals.

When a contract was signed, the industry settled for a three-year agreement although it had wanted a five-year term. Even so, the economic value of the contract was almost as great as the industry had been willing to grant in exchange for the longer-term agreement. Many smaller companies in the industry criticized this as a "retreat" from a carefully prepared position.

In this sense, the similarity between the steel bargaining policy in 1956 and "Boulwarism" ended when the compromising began.

- **USW's Pessimism**—Steel's next big bargaining will be in mid-1959. Two weeks ago, the union served notice that it will press then for very substantial gains, and warned members to expect a "very tough go"—perhaps a long strike.

There is reason aplenty for the union's pessimism. Talk in Pittsburgh and other steel centers indicates that the industry looks back on 1956 as a trial run for new techniques. Within the past week, a conference of steel industry people discussed what preparatory steps should be taken to make possible bargaining in even greater strength next year.

IV. Autos in 1958

A few weeks before the auto settlement, a labor reporter in Detroit asked a company spokesman if the industry

hadn't adopted "Boulwarism" in its bargaining with the United Auto Workers. The company man groped carefully for the right words for an answer.

"No," he said, in effect. "I wouldn't say we have followed 'Boulwarism,' but we do find that our thoughts on bargaining are very much the same as GE's basic beliefs."

- **New Tactics**—Before the start of this year's auto bargaining, the industry's Big Three broke with its past practices by public pronouncements on its negotiating aims; later, it did so again when it served contract cancellation notices. Although they negotiated separately, the Big Three did so with obvious "united front" coordination (BW—Sep. 20 '58, p. 34). They offered UAW a new two-year contract that would simply continue into 1960 annual wage stepups provided in the expiring 1955-58 agreement, plus inexpensive concessions. Through months of negotiations, the Big Three stuck firmly to this bargaining position.

In the last week, Ford-UAW's target for a strike threat—gave some ground, presumably with the foreknowledge and agreement of General Motors and Chrysler. Some "sweetening" was added to the Ford offer, to make it more palatable for the auto union's Pres. Walter Reuther and his negotiators. Thus, a deal was made.

But the company's terms do not go beyond what the industry had privately determined would be its final offer.

The agreement is generally described in management circles—with some elation—as Reuther's "poorest settlement," and as a victory for the auto industry's firmer negotiating policies.

V. What Next?

How much of a victory it was will be debated for a long time to come. With conditions as they have been in the auto industry, the company negotiators could have driven a harder bargain.

Undoubtedly, when auto negotiators feel able to talk more freely, they will defend their settlement as a product of mature and reasonable, but moderate, bargaining—and of a recognition that the long-term good relations of the companies and their employees would be served best by the "ample" concessions.

- **Wider Influence**—More than the money terms, the double fact that the auto makers bargained stubbornly and the powerful auto union gave ground is likely to influence late 1958 and early 1959 collective bargaining for the rest of industry. It underscores what many employers have felt all year: that this is the time management can bargain with the advantage on its side of the table.

Hot Issues on California Ballot

● **Proposition 17** is a sugar-coated amendment that would reduce the state sales tax, but send income taxes zooming. It will be flanked by two bitterly controversial proposals.

● **Proposition 16** would revoke the property tax exemptions of private grade schools and high schools.

● **Proposition 18** would outlaw the union shop as a condition of original or continued employment.

Businessmen with a stake in the California economy are growing uneasy about the Nov. 4 general election. Their worry centers on a tax measure that could undermine the state's credit and drive business to the storm cellars.

Oddly enough, the measure has only one advocate, the California State Federation of Labor (AFL). Its opponents embrace the whole spectrum of political and economic opinion, bedfellows as diverse as the state Chamber of Commerce and the CIO (not yet merged with the AFL in California). Opposition to the tax bill is about the only issue on which rival Republican and Democratic candidates agree.

• **Odds**—Yet public and private opinion polls all indicate that the measure would glide through comfortably if the election were held this week. There are a number of possible reasons. One is that it will appear on the ballot under the guise of a tax reduction. If you give 6.2-million voters a chance to vote for or against a tax reduction, how many will vote against Santa Claus?

Another, perhaps more persuasive, reason is that voter emotions have been whipped to a froth by the vigor of the gubernatorial contest and by a couple of other issues that will flank the tax measure on the printed ballot. One, striking sparks of religious intolerance, would revoke the property tax exemptions of private grade schools and high schools. The other is the bitterly partisan right-to-work issue.

• **Over the Barrel**—Upper income brackets would take a shellacking under the proposed tax rates, which top off at 46% for income in excess of \$50,000. The present scale is from 1% under \$5,000 to 6% over \$25,000. Proposed scale starts at 1% under \$5,000 and rises 1% with each increment of \$1,000 to the 46% ceiling. A married taxpayer with \$100,000 of taxable income, now paying state tax of \$4,500, would see his tax zoom to \$20,750. Married taxpayers under \$18,335 and single taxpayers under \$9,168 would pay lower state taxes.

• **Political Backdrop**—All of these cam-

paigns are being conducted against a backdrop of the most significant political battle in California since the depression thirties and the "pie in the sky" crusades of Upton Sinclair and Dr. Francis E. Townsend. Republican control of the State House in Sacramento is in serious jeopardy for the first time in years, and both major parties know that the November results will echo through the 1960 Presidential conventions and Congressional elections.

Genesis of this complex scramble of issues and personalities was the decision last fall of U.S. Sen. William F. Knowland, Minority Leader of the Senate, not to seek reelection but to run instead for governor of his state (BW-Oct. 12 '57, p155). Others assumed that he wanted the governorship as a springboard into the White House in 1960.

This move split the Republican Party in California because it肘bowed aside Gov. Goodwin J. Knight, who wanted to succeed himself but couldn't fly in the face of the Republican money that rallied to Knowland. Knight provoked another split by running for senator, a job on which San Francisco Mayor George Christopher had set his heart earlier with Knight's approval.

• **Democrats' Field Day**—While the Republicans were cutting each other's throats last spring, the Democrats leaped gleefully into the arena, and in the June primaries they won handsome majorities of the total party votes for all but one of their statewide candidates. This was possible under California's unique crossfiling system that permits candidates, regardless of party affiliation, to file for the nominations of both major parties if they wish—and they usually do. In effect, voters of all parties get a chance, in the primaries, to vote almost as if it were a general election. Thus, while Knowland won the GOP nomination in June and State Atty. Gen. Edmund G. Brown won the Democratic nomination for governor, Brown polled 600,000 more votes in total than Knowland. Similarly, Rep. Clair Engle (Dem.) topped Gov. Knight

by 560,000 though each won his party's nomination for the Senate.

• **Hot Issues**—Knowland strode into the campaign with a hot issue—voluntary unionism. This is right-to-work with a college education. Emboldened by his unequivocal stand, right-to-work forces in Southern California flooded the state with petitions for a right-to-work amendment to the state constitution.

It was at this juncture that the State Federation of Labor launched its petitions for the tax amendment. It was broadly assumed that the federation's motive was to retaliate against the sponsors of right-to-work. Questioned this week by BUSINESS WEEK, a spokesman for the federation firmly insisted that it had no such motive.

Both measures are relatively simple—in terms if not in effect. Proposition 18, the right-to-work initiative, would outlaw the union shop as a condition of original or continued employment. Proposition 17, the tax measure, would cut the state sales tax from 3% to 2% and push the graduated income tax to a whopping 46% ceiling.

Proposition 16, the private school tax measure, with its bitter overtones of religious prejudice, is not directly related to the other two. But because it, like the others, is highly charged with emotion, and because they follow successively on a ballot listing 18 initiative or referendum issues, many voters are sure to be confused.

• **Right-to-Work Split**—Prominent among sponsors of the right-to-work amendment—"Californians for yes on Proposition 18"—are Manchester Boddy, former publisher of the Los Angeles News; William Jennings Bryan, Jr.; Dr. Rufus B. von Kleinsmid, chancellor of the University of Southern California; Frank Freeman, vice-president of Paramount Pictures; A. J. Gock, director and former chairman of Bank of America; Irene Dunne, actress and delegate to the U. N.

In the northern part of the state, Roger D. Lapham, San Francisco's former "businessman mayor," is heading the campaign for Proposition 18.

The California Democratic Council voted outright opposition to 18. Republicans in their convention side-stepped the issue at Knowland's request, rejecting Knight's proposal that they reenact an old platform endorsing the union shop. Partly in consequence, Knight has yet to endorse the candidacy of the head of his ticket, and he has done nothing to discourage labor friends from coupling his name on billboards with that of Pat Brown, Knowland's Democratic opponent.

So far, the only prominent company

to take a public stand for Proposition 18 is General Electric. Vice-Pres. C. C. Walker pointed out that this stand was consistently with the company's historic resistance to the union shop.

• **Opponents**—Among foes of Proposition 18, in addition to religious leaders and the Democratic statewide candidates, is J. Paul St. Sure, prominent San Francisco labor relations attorney who is president of the Pacific Maritime Assn.—the coastwide employer body that deals with the waterfront and offshore maritime unions.

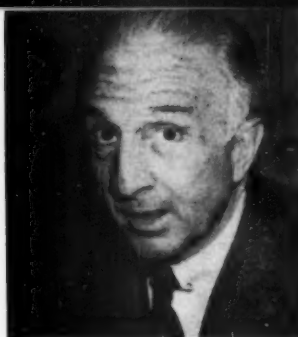
Opposing Proposition 18 in the south are prominent business figures such as Dan A. Kimball, president of Aerojet-General Corp.; Trevor Gardner, former Assistant Secretary of the Air Force and now chairman and president of Hycon Mfg. Co.; and Dore Schary, film producer.

The State Federation of Labor, of course, is putting its major efforts into the campaign against 18, although it stands as sole sponsor of Proposition 17, the tax amendment. Against the mighty opposition to the tax measure that has been mobilized, the federation says that it is doing nothing in the way of active promotion. A spokesman pooch-pooches as campaign oratory the fears that it will cost the state up to \$200-million a year in revenues.

• **Tax Amendment Foes**—It would be an extravagant overstatement to say that everybody in California except the State Federation opposes Proposition 17. But the committees running the anti-17 campaign have lined up impressive names including all the leading Republicans and Democrats, all major business associations, taxpayers and property owners associations, and the like. CIO's alignment with the antis underscored the AFL body's solitude on the other side.

What troubles many of the foes of 17, who might otherwise favor an increase in the income tax, is that the amendment would also abridge the legislature's power to levy sales and income taxes. Only by further amendment, requiring statewide referendum, could rates be adjusted. The sales tax produced 55% of the State's general fund revenues; the tax revenue was \$626-million in the 1957-58 fiscal year. To repair the expected damage to the tax structure, the legislature's alternatives would be to expand the coverage of the sales tax to retail food purchases, to stiffen the excises on tobacco, liquor, and gasoline, and to impose a state property tax.

The state fiscal officers fear that adoption of Proposition 17 would sour the market and stiffen the interest on its bonds. Businessmen see the sharp rise in income tax rates driving upper-bracket taxpayers out of the state and casting a pall over corporate securities.



WILTON B. PERSONS

He was Adams' deputy



HARLOW

General



HAGERTY

Press



STEPHENS

Appointments



MORGAN

Law



MOOS

Speeches



SNYDER

Physician



GOODPASTER

Traffic



MERRIAM

Troubleshooter



R. GRAY

Cabinet

These men turn the White House wheels



G. GRAY
National security



STRAUSS
Atomics



KESTNBAUM
Hoover Commission



RANDALL
Foreign economics



QUESADA
Aviation



KILLIAN
Science



BRAGDON
Public works



SICILIANO
Minorities



MORROW
Special projects



HAMPTON
Patronage

**These men watch
particular subjects
for the President**



ANDERSON



McCABE



PYLE

**These men
keep in
touch with
Congress**

The Men Adams Leaves Behind

This week, Pres. Eisenhower lost the key man in his carefully developed administrative staff system. Sherman Adams finally bowed to the inevitable and resigned his White House job—which, among other things, had put him at the head of a staff including the men in the pictures.

Formally, Adams' title was "the Assistant to the President." The title understated Adams' real role in the Administration: until recent months when his decline began, Adams wielded so unique a power in the White House

that he was known more simply—by friend and detractor alike—as the Assistant President.

• **Predictions Fulfilled**—The resignation of the flinty New Englander was no surprise to Washington. It had been forecast since last spring, when a House investigating committee spread on the record the story of favors and gifts be-

FAREWELL ADDRESS of Sherman Adams stressed his conviction he had done no wrong.



stowed on Adams by an old friend, Boston industrialist Bernard Goldfine, who had troubles with federal regulatory agencies.

Democratic howls for Adams' scalp began at once. But, in the end, it was intense pressure from hard-pressed Republican Congressional candidates coast-to-coast that caused him to announce he was giving up.

Remarkable Democratic gains in Maine were the last straw. The Democrats didn't campaign openly on the Adams-Goldfine case, but it was still a big unspoken issue, and Republican strategists were genuinely shocked when they lost the governorship as well as a Senate seat.

I. Sherman Adams' Legacy

At midweek, Washington expected that Eisenhower would quickly designate a successor to Adams. The new Assistant to the President will inherit a big staff of diverse talent. Every one of the White House staffers, in one or several ways, is important to the smooth functioning of the Presidency.

In outward appearance, there will be little change. Eisenhower, by the nature of his background, insists on a staff system that works "through channels"—and, therefore, saves a lot of routine from reaching the top. But there is another factor—the Presidency has grown so complicated that a big staff, replete with specialists, is an absolute necessity.

- **Diffusing Power**—Nevertheless, an era is ending at the White House. Washington is convinced that, in terms of power and influence, there will not be "another Sherman Adams"—in other words, for the next two years, a process of informal diffusion of power is bound to occur among the top echelons of the White House staff.

One Republican official, never a strong personal admirer of Adams, puts it this way: "Sure, the man who sits in the Adams office will be a big man. He's bound to be. But there's not a chance Eisenhower can get himself someone to take off as much of the burden singlehandedly. No matter whether you like him or not, this man Adams has been thorough and efficient. And his pace is incredible. Why, a routine day on the job for him is 7 a.m. to 6 p.m."

II. Who Will Be Who

Adams' going leaves Press Secy. James C. Hagerty, an Eisenhower confidante and adviser as well as the White House spokesman, as the executive office insider closest to the President.

Hagerty has in many ways filled the gap left by Adams since the whole Goldfine episode began. Washington ex-

pects Hagerty to take on more importance as the days go on, in a relationship with Eisenhower comparable to Steve Early's with Franklin Roosevelt in the late war years.

The man who has sat closest to Adams' post—though entirely unlike him in personality—is retired Gen. Wilton B. Persons, Adams' No. 1 assistant and Eisenhower's old comrade at arms from World War II days. A decade ago Eisenhower once referred to Persons as "the man who knows me best."

Aside from Hagerty and Persons, there are a lot of familiar faces still around the White House—veterans such as Thomas E. Stephens, the appointment secretary, who in an earlier White House tour served as Eisenhower's chief counsel; Brig. Gen. A. J. Goodpaster, the staff secretary who is a housekeeper for official business matters; and Gerald D. Morgan, the President's official lawyer. Morgan, chief architect of the 1947 Taft-Hartley Act, came to the Eisenhower Administration in a lesser job at the outset, as a result of the Eisenhower wing's accord with the Taft elements of the Republican Party. All of these men figure to become more important characters in the President's cast of close supporters.

III. New Faces of 1958

There is one especially important new face, too—Robert E. Merriam of Chicago, who moved over from Deputy Director of the Budget Bureau to be, like Persons, a Deputy Assistant to the President. Insiders expect Merriam—a topnotch administrator, ex-professor at Northwestern and the University of Chicago, former Chicago alderman, and one-time losing candidate for mayor of Chicago—to move quickly into the inner circle of Presidential advisers. His chore is to serve Eisenhower as a roving troubleshooter among the departments and agencies of the executive branch, an assignment so broad it can put him in the middle of almost anything.

Another new face is that of Dr. Malcolm Moos, a political science professor on leave from Johns Hopkins University, who will be Eisenhower's No. 1 speechwriter. Moos succeeds Arthur Larson, who attained a reputation—during his tours at the Labor Dept. and later the White House—as a leading spokesman for Modern Republicanism. Moos is an adherent of the same political doctrine.

- **Changing Places**—There has been some internal shuffling, too. Bryce N. Harlow, a one-time White House speechwriter and the legislative legman mainly responsible for obtaining a defense reorganization act acceptable to Eisenhower this year, has moved up an administrative notch. He becomes more

strategist, less "lobbyist" (only on major projects, hereafter), and a sometimes writer (on such as the State of the Union report).

Edward A. McCabe, formerly on Morgan's legal staff, joins ex-Congressman Jack Z. Anderson of California on the legislative liaison team as a result of Harlow's promotion. The move is significant, for McCabe is a graduate of the House Labor Committee staff and qualifies as an expert on the topic that will be among the biggest the coming 86th Congress has to deal with.

IV. Comings and Goings

With little more than passing attention being paid, other changes have been occurring. Robert Cutler has been in and out of Eisenhower's official family for a second time, and his place as top staffer on national security affairs has been taken by Gordon Gray, another administrator frequently called to serve government.

Robert K. Gray, a young Nebraskan, has succeeded Maxwell Rabb as Cabinet secretary. Robert E. Hampton, a Tennessean who graduated from the conservative political organization of Rep. B. Carroll Reece, has taken over from Gray as patronage adviser, helping to decide who gets what job. Republican politicians hold Hampton in high regard. Rocco Siciliano, who moved into the White House after being Assistant Secretary of Labor, has fallen heir to another part of Rabb's job—dealing with minority problems.

- **Expert Advisers**—The White House roster of specialists reflects the complexities that confront the government. Dr. James R. Killian, Jr., for example, was brought in as Eisenhower's science and education adviser after the Russian successes with space satellites. Among other things, Killian will serve as the President's referee in the inevitable squabbles between civil and military agencies racing to conquer space.

Likewise, Lewis L. Strauss, retired as chairman of the Atomic Energy Commission, owes his presence on the staff to Eisenhower's need for counsel on problems attending the development of the peaceful atom. And Lt. Gen. Elwood R. Quesada moved into the White House as Eisenhower's chief aviation adviser about two years ago, when the collision of two airliners over Grand Canyon demonstrated tragically the need for modernization of U. S. airways with safety the foremost consideration. Quesada was a prime mover in the Administration's acceptance of a Federal Aviation Agency, with control over all commercial and most military sky traffic, and has become the logical choice to be first director of the new setup.

Broker Feels Big Board Lash

Shake-out in government bonds results in punishment of Exchange member for ignoring 5% margin rule in complex "repurchase" deals during earlier speculative heyday.

In an aftermath to last summer's drastic shake-out in U.S. government bonds, the New York Stock Exchange last week disciplined Garvin, Bantel & Co., a member firm specializing in arranging loans as a money broker.

The charges: five violations of Exchange rules, all stemming from the firm's dealings in loans to carry \$500-million in government bonds. In effect, all of the violations imputed to the firm center around the charge that it failed to observe the Exchange's self-imposed rule requiring 5% margin on government bonds.

The Exchange fined the firm \$25,000, and suspended its senior partner, George K. Garvin, for three months. The 11 other partners received official censures.

Despite the discipline, Garvin, Bantel will continue operations. The firm has fulfilled all of its commitments on the deals under fire. It has a net worth of some \$1.2-million, and its financial position appears sound.

• **Bill of Particulars**—Specifically, the Exchange charged Garvin, Bantel with violating its rules by failing to require the 5% margin on government bonds, by neglecting to check up on its customers, and by failing to keep proper customer ledger accounts.

Though the firm has made no public comment, it did not contest the charges, and spokesmen concede that "hindsight" provides a different viewpoint on what it was doing. Garvin insists, however, that while his financing operations were under way he did not consider that he was carrying customers' accounts, and hence felt that he was not required to impose the 5% margin. He never asked the Exchange for permission to lower this 5% down payment, though nine other brokerage firms did obtain this permission.

• **Free Hand**—This was granted during the period, prior to the Treasury's refunding in June, when borrowers had a free hand in getting loans to carry government bonds. Money was easy, and banks financed such loans on far more liberal terms than normally. They also permitted delayed payments when carrying out buy orders, thus giving purchasers a chance to dig up the funds.

Garvin accomplished a similar purpose by using "repurchase agreements," which he insists he thought of as strictly financing arrangements, not as carrying customers' accounts.

• **Market Tool**—Repurchase agreements

as such are normal tools for money market professionals; a repurchase agreement or "buy-back" is simply a contract under which the seller of a security agrees to buy it back within a set time period, at a specific price, with interest.

The Fed, and large corporations and banks often buy bills for bonds for short periods through such agreements with government bond dealers—the dealers agreeing to buy them back at a stipulated date. The Fed does it in its market stabilization operations; corporations and banks buy bonds this way for short-term investments at higher interest than bills provide. The dealer is enabled to carry greater inventories than he might otherwise, and to make a broader market for government bonds.

• **Garvin's Way**—In Garvin's use of repurchase agreements, a third party got into the picture. The method was first used as a tax gimmick to help upper-tax-bracket investors juggle short-term gains and losses. Then the use spread to more speculative devices. In the fast rising government bond market of the early spring it worked like this.

Garvin, acting as middleman for big corporations, pension funds, and banks, on one side, and for brokerage houses and speculative interests on the other, made "back-to-back" deals. A corporation, say, would buy a huge block of the 2½% government bonds that matured June 15. These bonds would be selling in those days at a premium. To protect the corporation against loss of the premium, Garvin would agree to repurchase them at the same price just prior to maturity date. But, at the same time, Garvin would contract to sell the bonds to an individual or brokerage house, which could then convert the bonds to the new Treasury issue for an expected speculative profit if the new issue went immediately above par—as most had been doing.

The corporation had its short-term investment at about twice the income it would have received from Treasury bills—which were yielding 1% at best during most of the spring—and had it safely. On the other side—and this is where the Stock Exchange stepped in—speculators could lay their hands on millions of dollars of government bonds they needed to speculate on the Treasury refunding without having to provide any down payment or margin.

Garvin did well on the deal, too, collecting a regular broker's commission

of $\frac{1}{2}$ of 1% on each bond—a sizeable total on the large volume involved—and sometimes a slice of the bond income.

• **Opening**—What gave Garvin an entry into this expanding middleman's business was its unique position as one of the major brokers in the market for federal funds. These essentially are excess reserves of one member bank which are loaned to another bank temporarily in need of funds to balance its reserve requirements.

Garvin has pioneered in building up this segment of the money market, now handles about 50% of all such transactions. Some 115 banks, holding about 44% of total U.S. commercial deposits, regularly use its facilities for all or part of their funds business.

This gave Garvin the ear of some of the nation's leading banks—and through them of some of the top blue-chip companies that are their customers—to attract many to its repurchase agreements.

• **Future**—The bond market, of course, is no longer in a position to worry about speculative interest or repurchase agreements. It's doubtful that any major reforms will result from the Exchange action. But it's known that some measures are seriously being debated in Wall Street. One is to raise the margin requirement on governments—while exempting government bond dealers from such regulations in their transactions.

• **What Hurts**—What's most damaging to Garvin, Bantel, itself is that, in effect, it has been publicly branded as a culprit in the whole government bond debacle. The charge hurts, even though no one seriously believes that the firm was primarily responsible for the speculation in bonds; and a number of bank and insurance companies are reported to have pulled their business away from the firm.

Even Garvin, Bantel will admit that it exploited the speculative fever for U.S. bonds that gripped investors when bond prices soared earlier this year—but not that it created the speculative excesses.

As to that, Wall Street professionals point out that in recent years—ever since the Federal Reserve Board gained its independence from the Treasury in 1951—the government bond market has become increasingly sensitive to changes in Fed policy and in business conditions; so that, though speculators "greased the skids" (BW—Aug. 23 '58, p. 86), the shifts over the past year from tight to easier money, then to tighter money again, inevitably brought in speculators who were interested in taking advantage of what they thought would be big gyrations in bonds prices. This exaggerated the sharp market reactions of both last fall and this summer.

Yachting's Festival at Newport

John Potter, electrical manufacturer of Locust Valley, Long Island, went to the America's Cup Races off Newport, R. I., last weekend without a doubt in his mind that the racing itself would be an anticlimax. And that's how it turned out.

Potter and thousands of other people converged on Newport not so much to see an exciting contest—"As a spectator sport," said New York Herald Tribune columnist Red Smith, "yacht racing makes jackstraws pretty near the most thrilling competition in the world"—as to perform a ritualistic duty that every true yachtsman owes to the sport.

This act of faith brought 1,200 to 1,500 yachts into the spectator fleet on opening day, about 400 on Monday when the weekend boatmen left the sea to the elite of yachting society.

• **Social Salt**—John Potter is part of this upper crust. He and other seasoned

yacht owners and sailors like him are as much a part of the Newport spectacle as the initially one-sided duel between Britain's Sceptre (cover) and America's Columbia.

And his devotion to Newport race week in the face of his fear that the British had only a thin chance is a mark of his anxious feeling of responsibility about this event. It would be good for the sport if the British put up a good show in this, their 17th, effort to recover the cup taken from them in 1851 by the U.S. schooner America.

For Potter it was also a chance to show off his handsome 48-ft. cruising sloop Touché II (pictures), which he built, and to hobnob with yachtsmen of the same blue-water school.

Potter is an electrical engineer who set up his own business on Long Island in 1942 on little more than an Air Force promise to buy some instruments from



COLUMBIA (foreground) walks away from Sceptre early in the first windward leg of the opening race. She won by 7 min. 44 sec.

AT WHEEL, Potter steers course amid spectator boats while guest Don Browning watches racers. Touché is under power.



GUESTS ARRIVE for reception to America's Cup crews at J. N. Brown estate, Harbor Court.

AT PARTY, John Potter (right) chats with Arthur Knapp, Weatherly's skipper.



LATER IN RACE, Browning puts glass on Cup rivals while Mrs. Potter makes rough sketches for watercoloring, another hobby.



SAILBOATS dominated opening-day fleet of 1,500—at least in numbers.



BUT EXCURSION BOATS, like the Wilson Line's Boston Belle (above), towered over the fleet. One ocean liner provided both overnight housing and a view of the races each day.

him—if he could produce them. In the same year, he bought an Atlantic-class sloop, a small open boat, and started racing on Long Island Sound. By plowing back earnings, he made his company a \$3-million producer of data-processing equipment; by learning the tricks of yachtmanship, he drove his new Touché II to first place in Class B in this year's Bermuda race.

• **Boating Castes**—Millions of Americans own boats, most of them small and calling for no more skill than it takes to drive a car. A small fraction of these, perhaps 100,000 in all, have learned to sail a small boat competently. A few thousand own sailboats big enough to cruise and race on Long Island Sound, Chesapeake Bay, the Great Lakes, the Pacific, and only a few hundred of these figure as real threats in, say, an International Class race on Long Island Sound or in the Bermuda race.

There will be only a few dozen real sailors at the apex of yachting's scale of skill—men who can make almost any boat go in any kind of racing. These men are dedicated amateurs. Each hopes someday to build his own 30-ft. to 50-ft. boat, designed to double as a family cruiser in sheltered waters or a racer to Bermuda through an Atlantic gale.

• **Dream Boats**—That was the dream that came true for John Potter. And it's not very different from the dream that makes the America's Cup Race the supreme event in yachting. What makes it come to reality is the combination of the dedicated amateur, the small group of professional naval architects, builders, and sail cutters, and a certain amount of money—the 12-meter sloops cost around \$300,000, and the U.S. alone had four contenders.

When Columbia went to the line, she represented the best that the amateurs and professionals could produce. The shape of her hull reflects ideas that were tried and proven in fast ocean-

cruising boats like Potter's Touché II. Into her construction went the latest in epoxy-based glues and paints, titanium fittings, nylon and Dacron sails and lines.

As the other U.S. boats were climaxed, they sent over to Columbia the best they could offer: spinnakers, fancy winches, even a foredeck hand, Vic Romagna, who came over from Weatherly's crew.

• **Rah for Britain**—As the spectator fleet slid out of Brenton Cove at Newport Saturday morning to the race course 10 miles at sea, American yachtsmen were a bit self-conscious about the perfection of their effort to retain the historic cup.

After all, no one would make this expensive effort and put on this spectacle without someone to race against. And an 18th consecutive defeat might cause the British to give up. That's why at least one small American boat carried a big banner: "Go, Sceptre, Go." That's why talk on Potter's boat was on the hope of a strong British showing, not on Columbia's chances.

• **Preliminaries**—John Potter and his wife Aileen started their preparations weeks in advance. They invited Don and Helen Browning, sailing friends from Manhasset, to help sail Touché to Newport from Oyster Bay, L. I., on the preceding weekend.

Potter and Browning took turns at the wheel through the starry night. After a fast run of 15 hours, Touché picked up a mooring beside Sceptre at Newport's Ida Lewis Yacht Club.

Potter studied Columbia's hull as she was pulled up on the ways at the Newport shipyard. He talked racing strategy for hours with Arthur Knapp, skipper of Weatherly. Through the weekend he often wondered aloud how the British, who were relaxing, could leave their boat at a mooring for two days of beautiful sailing weather, with the big race only a week away.

Late Sunday, the party flew back to

Long Island. But at midweek, Aileen Potter was back in Newport to make sure Touché was ready for the weekend. Her husband and the Brownings turned up Friday afternoon for the New York Yacht Club party for the British and U.S. crews.

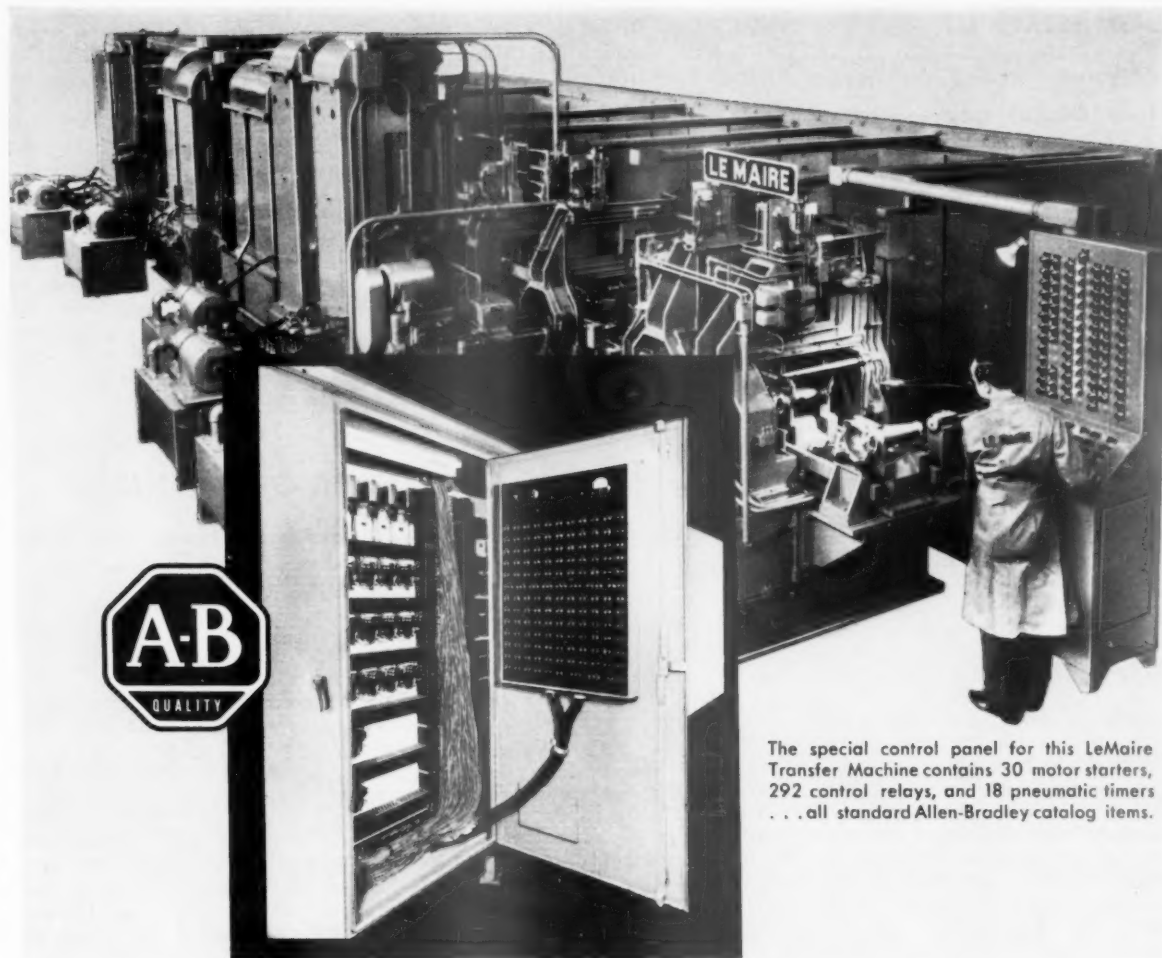
The reception was scheduled for the lawn of John Nicholas Brown's castellated mansion overlooking Brenton Cove, but it was forced into a tent by cold weather. About 1,250 people, including some of the best names in American society and some of the biggest titles in American business, stood on each other's feet and shouted in the wrong ears. Potter, coming directly from Touché, had to elbow his way in to have a word with Willis M. Fanning of the race committee, shake hands with his host, and check Arthur Knapp for the last word on Columbia.

• **Anticlimax**—Potter and his party slept aboard Touché (every hotel room in Newport had been reserved for two months), then got under way for the starting line just as Columbia was towed from her mooring. Potter used the main-sail and the working jib to steady his boat in the lumpy sea and to add to the seven knots her Mercedes auxiliary diesel would give her.

The forming of the spectator fleet was exciting—half a dozen excursion steamers, a dozen big Navy and Coast Guard ships, and small boats by the thousand. It seemed miraculous that there were no collisions, but most of the small boats were handled by men who knew what they were doing.

The opening race itself was a two-boat parade, with the British 8 min. behind at the first turn.

To John Potter and the other real sailors, it looked as if the real competition had been during the summer among the four U.S. rivals. Their final hope was that the British—or the Australians or Canadians or Norwegians—would come next year or the following year, and come with a hot boat.



The special control panel for this LeMaire Transfer Machine contains 30 motor starters, 292 control relays, and 18 pneumatic timers . . . all standard Allen-Bradley catalog items.

LeMaire selects **ALLEN-BRADLEY** Quality Motor Control

Control panels are the "taskmasters" of modern automatic production machines . . . they must be dependable. And your *best* insurance against costly control failures is your insistence on Allen-Bradley . . . the motor control of *proven* reliability.

The simple solenoid design around which all Allen-Bradley relays, contactors, and starters are built has only ONE moving part. This eliminates trouble

causing bearings and flexible jumpers . . . and assures *millions* of dependable operations.

In addition, the double break, silver alloy contacts—used throughout the Allen-Bradley line—never need servicing. They remain in perfect operating condition until completely worn away!

To maintain high efficiency production, specify the *best* in motor control . . . specify Allen-Bradley.

Allen-Bradley Co., 1332 S. Second St., Milwaukee 4, Wis.—In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

Another automatic production machine "goes Allen-Bradley"

Collapse in Tin

Break in the tin market raises doubts about international agreements to control other commodities.

The two-year-old International Tin Agreement—through which the world's biggest producers and consumers of tin tried to control the metal's price and supply—broke down last week. In so doing, it sent the tin market into a collapse and called into question the whole matter of world commodity agreements.

The questions could scarcely have come at a worse time. They cast a shadow over the current negotiations on zinc and lead (page 155), in which U. S. miners are deeply interested. The pall spreads, too, to other commodities for which international marketing agreements are being hotly discussed—notably coffee. Brazil and other Latin American nations depending on coffee for economic health sit down this week to talk about tighter regulations on their product.

• **Insufficient Funds**—What happened to tin was this: The Tin Council, set up to administer the international agreement, had been trying to prop the tin price up by buying the metal for a "buffer pool" and removing it from the world market. But with \$55-million or more spent and a reported 28,000 tons of tin in hand, it apparently ran out of money. The buffer pool's manager stopped buying on the London Metal Exchange.

Reaction was immediate. For half a day, there wasn't any London market in tin at all; when trading was resumed, prices had flopped fully 10%. From the support price of somewhat more than 91¢ a lb., New York equivalent, the market went to only a little better than 80¢. Though prices have improved this week, there still are deep discounts on metal for future delivery.

• **U. S. an Outsider**—The tin agreement, negotiated under United Nations auspices, took effect in 1956 after a three-year wait for Indonesia to ratify it (BW—Sep. 8 '56, p177). It applied to six producing nations (marketing 90% of the world's tin) and 13 consuming countries—the U. S. and Russia not among them. With a reservoir of money and metal to back it up, the agreement was supposed to check the wild price gyrations in which tin traditionally indulged.

At first, the floor price was £640 per long ton. When the market made that figure look too low, the pool adopted £730 instead. But with the onset of recession in the U. S., it became harder and harder to hold the price. Last De-

cember, members had to resort to a 284% cut in shipments—followed by a 40% slash and finally 48% effective Oct. 1. In March, with the buffer pool running shy of money, members also had to ante more cash. Then, last week, the collapse came.

• **Soviet Sales**—One complicating factor was the rapid rise in tin exports from Russia. The Soviet's shipment of 450 tons in 1956 (out of a total market for about 175,000 tons) didn't make much difference. But the figure shot up to about 9,000 tons in 1957 and to the same amount for the first six months of this year alone. The 1958 total may be 20,000 tons.

Three weeks ago, Britain and Holland

slapped tight quotas on Russian tin. Yet it was recognized that a certain amount of the Soviet metal could still seep out to unrestricted purchasers.

• **Steps to Come**—Negotiations to reconstitute the Tin Council will start Oct. 2. Russia has been invited to join but has agreed only to send an observer.

Short of actual membership, the U. S. might increase direct aid to the producers. Or it might speak to the World Bank on their behalf.

But the old-line producing nations are disenchanted. Because of the export curbs, they are suffering wide unemployment, loss of revenues, and political unrest. Some believe they might better go it alone.

Bankers Defeat Ouster of Mutuals

But ABA leaders assure commercial banks that they will press the fight for tax equality among all banks.

A bitter "family quarrel" that threatened to split the nation's banking community was patched together this week at the annual convention of the American Bankers Assn. in Chicago. Though an open break was averted, many bankers felt that the wounds of the battle will take a long time to heal.

The fight centered on an amendment, energetically pushed by Arthur T. Roth, president of Long Island's Franklin National Bank and an outspoken enemy of non-commercial banks, to exclude mutual savings banks from membership in ABA (BW—Sep. 20 '58, p53). Roth needed a two-thirds majority to get his proposal approved by the delegates. In a secret vote, conducted by an outside accounting firm, he was able to muster only a little more than 48% of the ballots.

This means that the savings banks can continue to hold membership in ABA and that the organization can maintain its place as official spokesman for the entire banking community. But in order to hold the group together, ABA officials and other bankers who favor keeping the savings banks as members assured commercial bank delegates that the fight for "tax equality" among banks will be pressed.

• **Rule on Taxes**—Commercial banks make up 95% of the ABA membership; mutual savings banks, most of the rest. Under current tax laws, mutuals can set up, out of earnings, a reserve of 12% of deposits before being liable to taxes. Commercial banks are allowed "bad-debt" deductions that average between 2% and 3%, but if they wish to retain earnings to strengthen their capital position, they have to do it out of after-tax profits.

This difference, according to the

commercial bankers, gives the mutuals a competitive advantage in the fight for savings deposits.

• **Beneath Dignity**—Many commercial bank delegates agreed with Roth that tax equality was needed. And ABA went on record demanding "the elimination of inequity in the taxation of financial institutions." But there was widespread feeling that the unbanker-like fight at the convention was likely to hurt ABA's chances of getting Congress to change the rules. Besides, delegates said, ABA is big enough to house both types of institution.

William L. Lyon, head of the National Assn. of Mutual Savings Banks and Roth's chief opponent in the fight, deplored the public battle. Although he was gratified by the result, he took the view that such differences of opinion should be settled "within the family."

"Banking makes a show of itself when it carries on in public," he said.

• **Mediation**—It is expected that the mutual savings banks will now sit down with ABA officials in an attempt to work out a program on taxes that both membership groups will support. Lyon feels that such a solution is possible, but he adds that if ABA should decide to adopt Roth's type of view, the mutual bankers will walk out in preference to being thrown out.

The ABA officers are in favor of coming to an agreement, and they worked hard to keep the savings bankers in the organization. Before an open debate on the Roth proposal, the ABA executive council recommended that the delegates vote against the amendment; later, it asked delegates to "close ranks" and see that "personal animosities" are buried.



CUTS 'EM DOWN, right or left. This powerful motor grader, shown here doing "high bank-cutting," can work its big blade in many seemingly awkward positions. It depends

on a drive axle of alloy steel containing Nickel to withstand rugged operating conditions. Photo courtesy of Le-Tourneau-Westinghouse Company, Peoria, Illinois.

How nickel-containing alloy steel keeps a workhorse shouldering its load

Step on this motor grader's accelerator... feel its 15 tons spring to life... as it rips out stumps and roots... scrapes out rocks and boulders.

What gives it the "drive" to push relentlessly along day after day?

Its super-strong nickel-alloyed steel drive axle.

This two-part drive axle is described by the manufacturer as one of the most critical parts of the road grader. Only 3½ inches in diameter, it has to be strong to push tons of hard-packed earth and rock. And it has to be shock resistant to withstand hours of abuse on the job.


What's more, the superior properties of this shaft must be uniform from surface to center and from one end to the other.

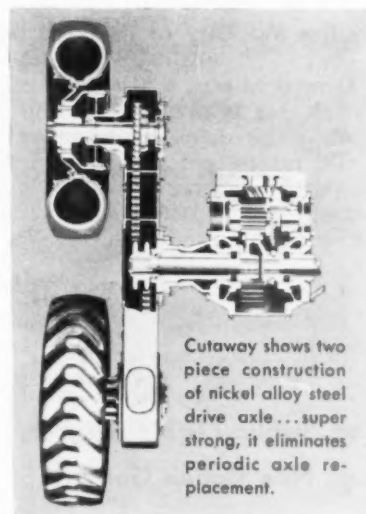
Fortunately, Le-Tourneau-Westinghouse engineers had years of experience with shafts and axles on other similar equipment. They knew

they could count on a nickel-containing alloy steel, AISI 4340 H, to take this punishment. Millions of hours on the job proved them correct.

Because 4340 steel is widely recognized as the general purpose alloy constructional steel for through hardening heat treatment, it is readily available from steel service centers throughout the country.

Are you looking for a metal with dependable strength... added toughness or corrosion resistance... excellent resistance to fatigue, shock, stress or wear? A nickel-alloyed steel may be just what's needed to help a product of yours "make the grade" with users. Talk it over with us. We can make available to you technical data based on years of specialized experience with alloys containing nickel.

The International Nickel Company, Inc.
67 Wall Street  New York 5, N. Y.



Cutaway shows two piece construction of nickel alloy steel drive axle...super strong, it eliminates periodic axle replacement.

INCO NICKEL

NICKEL MAKES ALLOYS PERFORM BETTER LONGER

In Business

• • •

Big Steel Boosts Tinplate Prices; Industry Expected to Tag Along

U. S. Steel, mostly a follower this year in the industry's price parade, this week moved first to boost the tag on the last major product still available at pre-August rates. Effective Nov. 1, the Corporation boosted the price of tinplate by 35¢ per base box, except at the Pittsburgh (Calif.) plant, where the boost was 25¢.

The price increases apply to electrolytic and hot-dipped tinplate, plus black plate andterne plate. Extras were shuffled—some up some down—with a net effect of a 3.5% increase, the company said.

Other steel producers are expected to follow suit promptly, since a 35-day notice is required.

• • •

Net Working Capital in Second Quarter Climbed by an Unexpected 4%

Net working capital of U.S. corporations climbed by \$1.7-billion in the second quarter to reach a record \$166.6-billion, the Securities & Exchange Commission reports.

The gain—at 4% it was unexpectedly high (BW—May 3'58,p86)—came from negative reasons: Current liabilities were reduced by \$3.5-billion, only partly offset by a \$1.8-billion drop in current assets.

• • •

GM Startles the Trade Again— By the Modesty of Its Price Boosts

General Motors, which completely restyled its 1959 models, has given its competitors another shock: its prices, which are up, but by surprisingly little.

GM has dropped some series, and rejiggered items of "standard" equipment so 1958 and 1959 models are not strictly comparable. But taking lowest "factory list" prices for each line in each year, here's the lineup:

	1958	1959	Rate of Increase
Chevrolet	\$1,905	\$2,041	Less than 2%
Pontiac	\$2,335	\$2,390	Less than 2%
Buick	\$2,388	\$2,485	4%
Oldsmobile	\$2,514	\$2,574	2%
Cadillac	\$4,375	\$4,475	2%

One Swallow Is No Summer, But Buick Says New Models Get Fast Start

With the performance of Detroit's 1959 models constituting a major variable in economic recovery, first-week records this year are dignified with an interest they would not usually rate.

Buick, first in the sales room, says on the basis of very scattered returns that its new models (BW—Sep.20'58, p70) are off and running, with 42 dealers delivering 271 cars, and getting orders for 146 last Friday and Saturday. Projected to the whole country, the company says that gives 3,500 dealers selling about 20,000 cars in two days.

• • •

Sutton, Once an Air-Conditioning Leader, Halts Production and Seeks "Liquidity"

O. A. Sutton Corp., once a major factor in the making of fans and air conditioners, this week closed down its last production line and pressed the sale of inventory and receivables "to gain a liquid position." If liquidity can be achieved, the company said, it hopes to remain in business. Rumors in Wichita are that Ottis A. Sutton, chairman, president, and owner of 42% of the stock, is trying to sell the company to General Electric.

The company had a peak postwar payroll topping 1,800 employees. Sales in 1956 reached \$50-million, but a year later they were down to \$20-million, depressed by cool weather and the general softening of the economy.

• • •

Business Briefs

The Boeing 707 this week got the first certificate of airworthiness ever issued for a pure-jet transport by the Civil Aeronautics Administration. The four-engine transport is scheduled to begin service Oct. 26 on Pan American's North Atlantic routes, and early next year on American Airlines New York-Los Angeles run. . . .

... Meanwhile, Eastern Air Lines has asked the Civil Aeronautics Board to investigate—and if need be sue to block—the deal by which National Airlines hopes to be able to lease Pan American's Boeing 707s to use on National's New York-Miami route (BW—Sep.6'58,p44). The deal would let National score a U.S. domestic first in jet service, beating American Airlines to the tape.

Denver is finally going to get its much-mooted big new hotel. Under a deal that some call a peace treaty and some a marriage contract, Hilton Hotels will furnish and operate a 1,000-room hotel to be built by Webb & Knapp on its Courthouse Square complex. W&K will get 50% of net profits, with a \$1-million-a-year minimum guaranteed.

The Texas oil allowable for October has been set on an 11-day basis by the Railroad Commission; that's 246,555 bbl. per day less than the September allowance.

A plan to merge Johns-Manville Corp. and L-O-F Glass Fibers Co. was announced this week. Stockholders of L-O-F—now controlled by Libbey-Owens-Ford Glass Co.—would receive one share of J-M stock for each 2½ shares of L-O-F common.



Plants, too, can have high blood pressure

The continued use of tired, unprofitable equipment can spell bad news. Overwork, and constant straining to meet the pressures of competition, inevitably take their toll.

The industrial cemeteries are full of the victims of false economy. Meanwhile, the cost of a "production examination" is nothing, and the possible benefits resulting from such a check-up are increased health, efficiency and profitability!

No other machine tool builder in the world can equal Jones & Lamson's 123 years of industry-wide experience in reducing costs and increasing profitability with the most advanced metal working equipment.

**the man who needs
a new machine tool
is already paying for it**

Let us help you diagnose your production efficiency with an in-plant survey — and a sound replacement program if indicated. We offer a variety of financing plans.



JONES & LAMSON MACHINE COMPANY • SPRINGFIELD, VERMONT

Turret Lathes • Fay Automatic Lathes • Milling & Centering Machines • Thread & Form Grinders • Optical Comparators • Thread Tools



Q. How many of these Royal advancements does your secretary enjoy?

A. None of them . . . if her typewriter is more than five years old.

Why does a new Royal Standard turn out *more* work and *better* work with *less* work than the time-worn machines you're now putting up with? Consider these Royal advancements...

1. Finger-balanced touch . . . the *only* standard with touch tailored to each finger—closest approach to electric touch in all standard typing.

2. Finger-form keys are double-molded to cushion fingers comfortably—shaped to keep fingers from slipping off, assuring both speed and accuracy.

3. No-smudge ribbon change . . . she can put in a fresh Twin-Pak in nine seconds. Her fingers never touch the ribbon. No winding—ever.

4. No-skip space bar slopes to fit thumbs comfortably. Positively will not bounce—even at 160 words per minute.

5. Snap-out cylinder takes half a second to remove for cleaning or changing. No waiting for service—though Royal service is renowned for speed.

6. Letter-setter—an aluminum rear feed roll starts paper with carpenter's-square accuracy . . . delivers you from slant-lined letters forever.

7. Lightning carriage return whips back at a touch via the positive-action line space lever.

8. Five cheerful colors in pleasant two-tones give a lift to your office,

match your décor. You choose—and you pay not a cent extra.

This is the typewriter secretaries favor—by a margin of 2¼-to-1.

There are more Royal Typewriters in office use than any other make. They spend less time in the repair shop and bring more at trade-in time than any other typewriter.

MORAL: Cut costs—trade in your old slow-poke typewriters on new Royal Standards.

ROYAL®
standard

Product of Royal McBee Corporation,
world's largest manufacturer of typewriters.

WASHINGTON OUTLOOK

WASHINGTON
BUREAU
SEPT. 27, 1958



A report on the President, back in the White House from vacation but minus his chief of staff, Sherman Adams (page 42):

Eisenhower looks to be in good health. He came back well-rested; his disposition is good; he has gained some bounce. People close to him say he got more relaxation than ever before, once the chore of handling adjournment-rush legislation had been done.

The President enjoyed a degree of isolation at Newport. His golfing partners were few, and limited to long-time intimates. He got away often; even Press Secy. Jim Hagerty lost track of his boss for several hours once. Eisenhower played more golf and shot lower scores, carding one 82. His only major appearance was at the start of the America's Cup Race; then he stayed only a half-hour.

He returns to face the most trying years of his Administration. Dominating everything else is the cold war struggle with Soviet Russia. Washington expects the gnawing and frustrating job will be before Eisenhower continually, with little or no letup.

Secy. Dulles is carrying the major burden, but always the decisions come to the President for final approval. Dulles will carry the load for the Administration in the Mideast and China controversies and in negotiations for ending nuclear weapons testing. But again the toughest problems will be put to Eisenhower.

Atty. Gen. Rogers is taking the lead in the school integration controversy. But more and more pressure is being put on Eisenhower to take a personal stand on what to do.

Budget Director Stans and Treasury Secy. Anderson will handle the budget-making, now well under way. Eisenhower will have to make the final decision, though, at least on the size of military spending.

To make it tougher, the Democrats will be more critical as the 1960 Presidential election year approaches. Speaker Rayburn and Senate leader Johnson will find it far harder to hold Democrats in check as members begin to jockey for advantage—for themselves or for their favorites for the nomination.

The President means it when he says he must pace himself. He has maintained his physical well-being by such a regimen. But Washington expects him to find this harder to do in the next two years, partly because no one expects Adams' successor to carry as much of the White House work load.

— • —

The cost of the Benson farm program is going up. The taxpayer will pay \$4-billion for support loans on surplus crops this year. And officials predict the figure will go up more than \$1.5-billion next year.

Some 17-million acres taken out of cultivation in the last two years will be permitted to go back to cultivation next year; the acreage reserve scheme is dead.

Even the lower price supports are still attractive enough to make the farmer plant. Cotton, corn, and wheat crops rose to record levels this year

WASHINGTON OUTLOOK (Continued)

WASHINGTON
BUREAU
SEPT. 27, 1958

because of good weather and better cultivation. Agriculture Dept. officials see even bigger crops next year if the weather holds.

—●—

Rising business profits will come under Democratic attack. Democrats claim the fruits of increased productivity are not being shared fairly with either the worker or the consumer.

The Joint Economic Committee will crank up in December. Chmn. Wright Patman (D-Tex.) wants to get the story of prices and their effects on the economy. The big question he is readying for business witnesses: If prices continued to rise during last spring's recession, why aren't prices going down now? Instead, profit margins are going up, he says.

The Senate Anti-Monopoly Committee will renew its inquiry into so-called administered prices; this time, Sen. Estes Kefauver (D-Tenn.) will specifically investigate meat and farm machinery prices.

—●—

A new political group has been organized. It's the Americans for Constitutional Action, established as a counter to the Americans for Democratic Action. Adm. Ben Moreell, chairman of the board of Jones & Laughlin Steel Corp., is chairman. The ACA will support candidates of either party, as does ADA.

—●—

A try at putting Buy American clauses in highway-building contracts is gaining ground. The Texas State Highway Dept., a few weeks ago, attempted to force contractors to use only U.S.-produced materials. Though the U.S. Bureau of Public Roads told Texas "No," at least nine other states are trying similar restrictions on buying.

Utah is the latest to put the issue to a test. Federal Highway Administrator Bert Tallamy has favored handling the cases one at a time, as he did with Texas. Now his legal staff says the issue is broad enough to warrant a blanket ruling. And the staff is against Buy American clauses.

Imports of cement and steel are the major targets. You can expect the decision to be put to the President.

—●—

Plans for developing atom bombs for industrial use may become a victim of the cold war. The Atomic Energy Commission is having to delay negotiations with industry in order to avoid complicating matters for U.S. negotiators to the Geneva conference on banning nuclear-testing. The U.S., Britain, and Russia start talks Oct. 31.

The AEC wants to push industrial use of explosives. Its Project Plowshare has uncovered considerable interest in the mining, electric power, chemical, and oil industries—particularly the latter. Government and industry experts have been comparing notes.

But Russia claims Plowshare is only a disguise for weapons testing. So, the project will be delayed until its status is clarified at Geneva.

—●—

Changes in the amount of tax deduction allowed on plant and equipment will be forthcoming from Internal Revenue Service. The new Bulletin will shorten the tax life of some items, lengthen others.



The "Guaranty Customer" visits his bank's Transit Division. Photographed by Loebel.

THE GUARANTY CUSTOMER CAN ACHIEVE CLOSE CONTROL OF CORPORATE FUNDS

The financial officer of a nation-wide corporation needs a constant flow of current information to function successfully. He needs many facts. Not the least in importance is an accurate, up-to-the-minute report of funds in his depository banks throughout the country.

The Guaranty customer can get this information and achieve finger-tip control of his funds through Guaranty's National Clearing Plan. Guaranty sets up check collection routines on a coast-to-coast scale, making use of Post Office Lock Boxes and regional banks serving as concentration centers.

The customer saves as much as five days' float on remittances. He gets a daily balance report of funds in his regional bank. He can transfer balances to his central bank more rapidly.

If you would like to learn how the plan can be tailor-made to suit your present and long-range needs, call or write our Transit Division.

Our booklet, "Better Control of Corporation Funds through The Guaranty National Clearing Plan," is available on request.

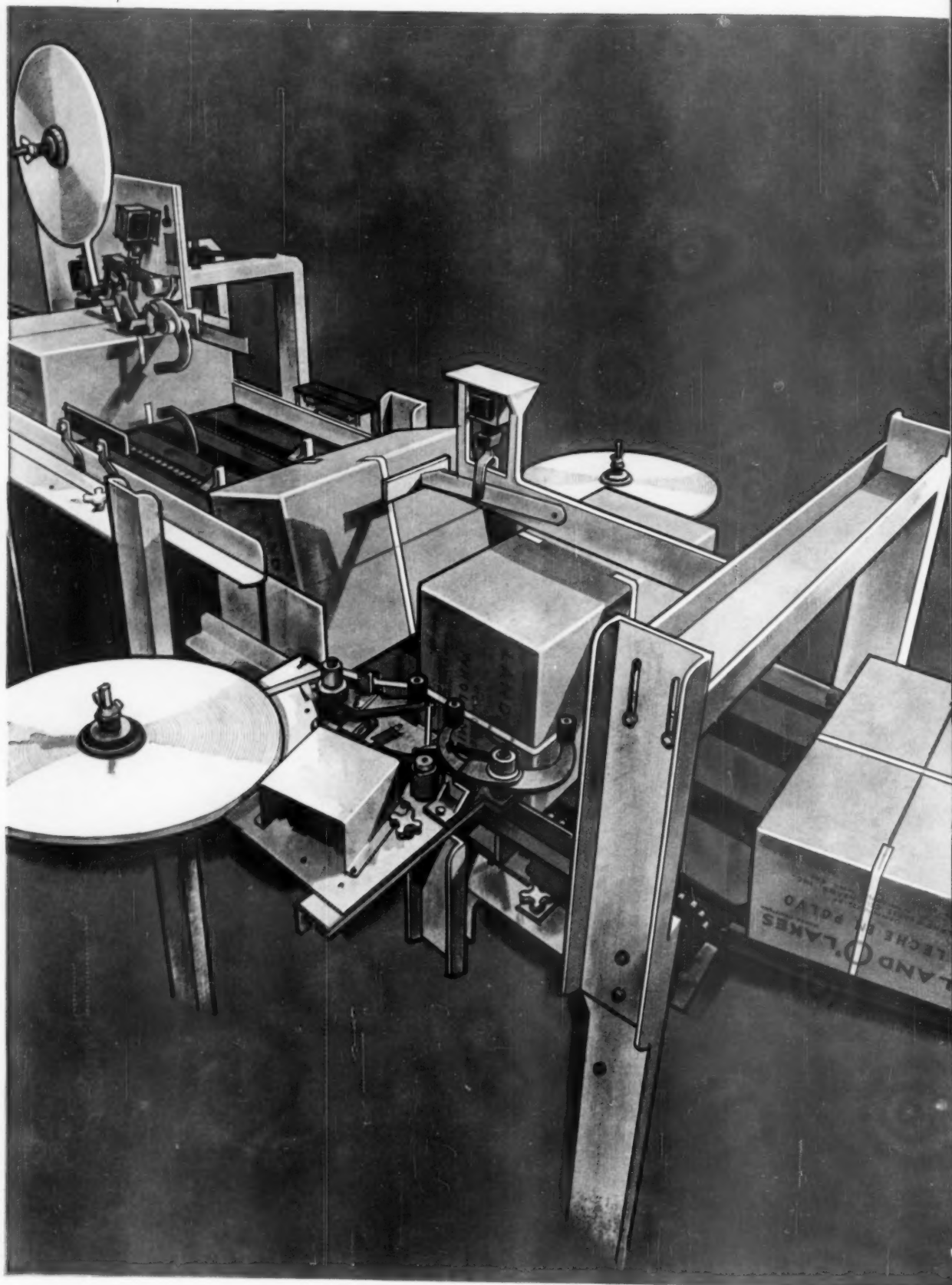
GUARANTY TRUST COMPANY OF NEW YORK • 140 BROADWAY, NEW YORK 15

Capital Funds in excess of \$100,000,000



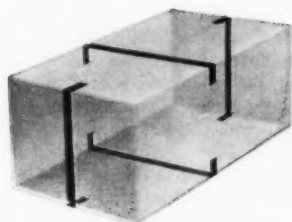
Fifth Avenue at 44th St., New York 36
Madison Ave. at 60th St., New York 21
40 Rocketteller Plaza, N. Y. 20 • London • Paris • Brussels
Member Federal Deposit Insurance Corporation

The Bank for BUSINESS—where business leaders bank.



"3M-MATIC" taping and dispensing method cuts costs...

Reinforces up to 30 cartons a minute!



Carton Reinforcing Machine
applies four tape strips in seconds.

Reinforcing cartons for overseas shipment is now a completely automatic operation at Land O'Lakes Creameries, Inc., Minneapolis, thanks to "3M-MATIC" taping and dispensing methods.

Result: automatic reinforcing of 12 cartons a minute with super-strong "SCOTCH" BRAND Filament Tape doubled previous production rate. In addition to giving better results, man-hours have been cut to practically zero, and only half as much reinforcing material is used. Production speeds of up to 30 cartons per minute are possible with this "3M-MATIC" system—on almost any size or shape carton.

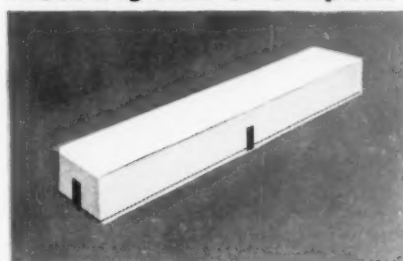
Developing the right combination of tape and applying machine was a teamwork operation. Working with Land O'Lakes, 3M's Sales Representative and Customer Engineers recommended the "SCOTCH" BRAND Filament Tape to meet the necessary specification. Then 3M engineered the machine that would apply the tape to the cartons at the production-line speed required by Land O'Lakes.

3M Customer Engineering Service is available to you—to help solve *your* production problems with "SCOTCH" BRAND Pressure-Sensitive Tapes—at no cost or obligation.

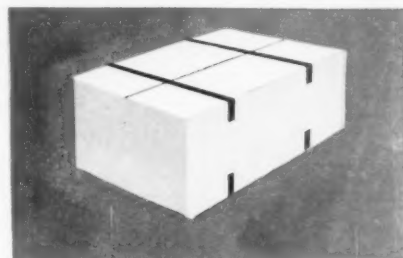
And, when the best "3M-MATIC" combination for your needs has been developed, the industry's largest and best-equipped distributor organization assures you of continuing prompt and dependable service. There's a "SCOTCH" BRAND distributor near you. Call him for further information, or write to Minnesota Mining and Manufacturing Company, St. Paul 6, Minn., Dept. BF-958.

"Scotch" is a registered trademark for the pressure-sensitive adhesive tapes of 3M Co., St. Paul 6, Minn. Export: 99 Park Ave., New York 16, Canada: London, Ontario.

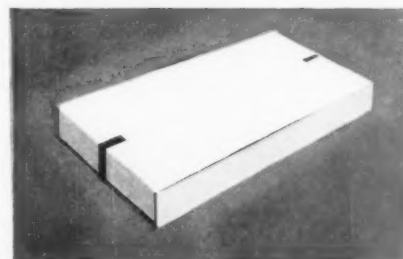
**Tapes cartons of
most any size or shape...**



Full Telescope Cartons



Regular Slotted Cartons



Overlap Slotted Cartons

When tape costs so little, why take less than

REG. U.S. PAT. OFF.
SCOTCH BRAND

© 3M Co., 1958

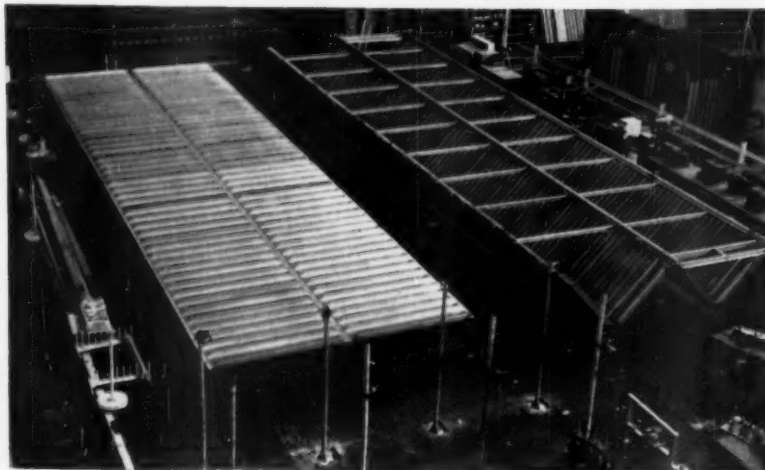
MINNESOTA MINING AND MANUFACTURING COMPANY

...WHERE RESEARCH IS THE KEY TO TOMORROW

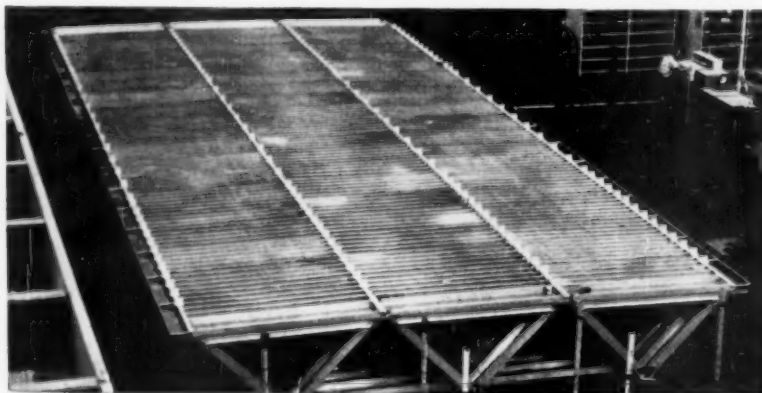


INDUSTRIES

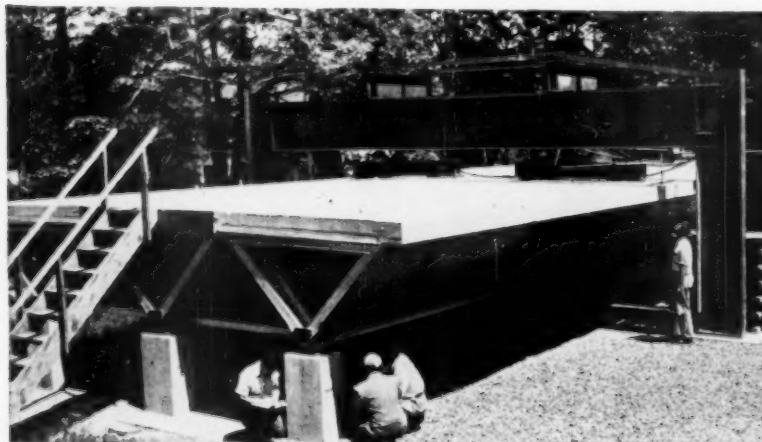
Aluminum Hopes New Design Will



SHOP FABRICATION produces standardized sections of bridge. In this picture, bottom plate at left awaits joining to main beam assembly at right before shipment to site.



COMPLETED SPAN awaits final inspection at Fairchild plant in Hagerstown, Md. Sponsors say more than 90% of fabrication and assembly can be done at the plant.



FIELD TEST includes use of Swiss-built pulsating jacks (above) to put stress on the span, to simulate a century of normal service. Lehigh University men check results.

If there's one thing that doesn't faze an aluminum producer at all, it's assailing a new market long dominated by well-established materials. About all aluminum requires before taking on such a tussle is this:

The new market must promise some real volume.

It's on that basis that aluminum has added highway bridges—of all things—to a long list of materials and markets it has under assault. That means structural steel and concrete now face the competition that copper has encountered in electrical conductors, that masonry faces in building walls, that cast iron must ward off in auto engine blocks and pistons, that stainless steel has felt in automotive trim and truck bodies, and that paper notices in packaging.

As in earlier commercial explorations, aluminum figures it has a secret weapon in the bridge field. That would be an engineering design that makes full use of its properties (pictures).

But unlike some earlier campaigns, this one involves a market that, while huge, is intensely competitive. For although steel always has been top dog, pre-stressed concrete has done a lot of business in the last couple of years.

I. A Group Effort

To penetrate such a market, aluminum mustered its first team. That includes four producers—Alcoa, Kaiser, Reynolds, and Olin Mathieson; an experienced aluminum fabricator—Fairchild Engine & Airplane Corp.; and the U.S. Bureau of Public Roads.

These five companies, plus the bureau, operate under the formidable title of Joint Committee for the Development of the Fairchild Aluminum Bridge. Their combined efforts required only about 18 months to progress from a decision to undertake the project to a point where testing of the prototype is approaching completion.

The design concept is credited to A. A. Gassner, chief engineer and general manager of Fairchild's Kinetics Div.

• **Something to Sell**—The group hasn't sold anything yet. But if the severe prototype tests—probably unprecedented in thoroughness—prove the design, the U.S. bureau, which has about \$10,000 of its own money invested in the project, would publish design criteria for the Fairchild bridge. That would give both the aluminum producers and Fairchild something to sell to state highway departments.

State roadbuilders will be buying perhaps \$11.3-billion worth of bridges in

Sell Bridges

the next dozen years or so for the federal highway program alone—plus quite a few more for conventional federal-aid and state and local road programs.

When will aluminum have a product to sell? A Bureau of Public Roads source figures the Fairchild bridge could be salable to federal-aid programs by next June—a little late for the 1959 road-building season. But at least one aluminum producer hopes to sell one or more elsewhere this year.

II. New Look in Bridges

Fairchild is the key to aluminum's market strategy. Figure it this way:

- As ingot, aluminum costs four times as much as steel. That poses a pretty tough cost problem.

- But aluminum weighs about one-third as much as steel, which cuts down the disadvantage.

- As spans lengthen, structural deadweight increases even faster. Being so much lighter, aluminum feels this penalty much less severely.

- Hence, to compete effectively, light, expensive aluminum must avoid orthodox bridge designs based on cheap, heavy steel and concrete.

- **Airplane Type**—That's where Fairchild comes in. For the aircraft industry has 30 years' experience at maximizing aluminum's good strength-to-weight ratio. Naturally, Fairchild resorted to an aircraft-type, stressed-skin design—one that builds up a thin skin to take the stress itself, rather than putting the stress on solid supporting beams. As a result, the Fairchild bridge uses one pound of aluminum to do what four to five pounds of steel would do in a steel design for similar loading.


That doesn't quite close the gap, costwise, but it gets close. Aluminum people are confident that the gap will disappear if:

- They can sell longer, rather than shorter, spans.

- And they can sell enough standardized spans to get the full advantage of repetitive shop fabrication.

- **How It Is Made**—The Fairchild bridge is made of huge, triangular, hollow aluminum beams, running the length of the bridge. Each consists of three long .81-gauge aluminum sheets stiffened by shop-riveted extrusions, and fastened together at their sides to form the long, hollow, triangular beam.

In the prototype bridge, three such beams are bolted together side by side, each mounted on its apex, with the 8-ft.-wide inverted bases of the triangles



V I K I N G

L I N E

BAKE-FINISHED LIFETIME ALUMINUM ROOF AND SIDING... MAINTENANCE-FREE

Top building authorities predicted it... suddenly it's here!

Now, from National Homes research and development, comes the technological breakthrough that makes current home-building methods obsolete! It's exclusive, available only to National Homes franchised builder-dealers—available only in the revolutionary *Viking* line. Each house has been skillfully planned for completely new livability. Each is better built, more charmingly styled—in every price range—than any house on the market...

And the entire exterior, both roof and walls will be lastingly maintenance-free... fire-safe...

weather protected. It will look freshly painted... stay new... year after year after year!

The secret is a tough, new factory-built exterior of baked-finished lifetime aluminum that protects, beautifies every inch of the roof and siding.

This revolutionary construction saves exterior upkeep during the entire life of the house... saves the buyer more than \$4,000 in the first 20 years, enough to furnish the home or to send a child to college!

Yet the aluminum exterior adds nothing to initial

cost. *Viking* models can be sold profitably for as low as \$7,600 plus lot in some areas... sold easily in models to \$50,000. *Viking* construction has already been used to build a Howard Johnson Motor Court, an addition to the Edgelea Public School in Lafayette, Indiana, and a branch bank of the Philadelphia Saving Fund Society.

Viking homes are now being shown by invitation only and strictly by appointment to qualified builders. To schedule your showing, write James R. Price, Chairman, National Homes Corporation, Lafayette, Indiana.

(To qualified builders: Only National Homes offers financing for every phase of your operation—land procurement, site development and interim as well as final financing.)

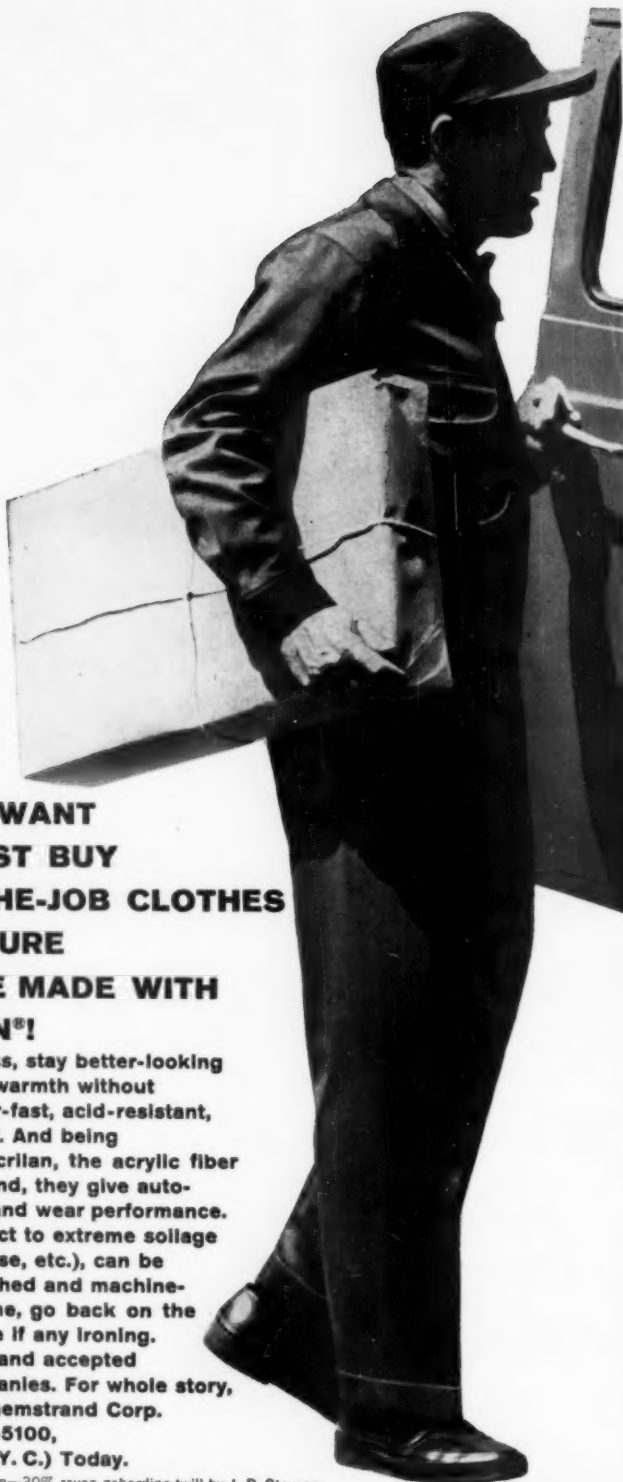
**IF YOU WANT
THE BEST BUY
IN ON-THE-JOB CLOTHES
MAKE SURE
THEY'RE MADE WITH
ACRILAN®!**

They cost less, stay better-looking longer, give warmth without weight. Color-fast, acid-resistant, mildew-proof. And being made with Acrilan, the acrylic fiber by Chemstrand, they give automatic wash and wear performance. Unless subject to extreme soilage (oil and grease, etc.), can be machine-washed and machine-dried at home, go back on the job with little if any ironing. Field-tested and accepted by top companies. For whole story, write The Chemstrand Corp. or call OX 5-5100, Ext. 335 (N. Y. C.) Today.

Fabric: 70% Acrilan—30% rayon gabardine twill by J. P. Stevens.

ACRILAN

THE CHEMSTRAND CORPORATION
350 Fifth Avenue, New York 1 • Plants: ACRILAN® ACRYLIC FIBER—Decatur, Alabama • CHEMSTRAND® NYLON—Pensacola, Florida



forming a continuous 24-ft.-wide top plate. The apexes of the three triangles, on the under side of the bridge, are tied together by .125-gauge aluminum bottom plate. The concrete roadway slab is poured directly on the top plate.

The three-beam prototype, set up at Lehigh University, Bethlehem, Pa., has withstood repeated tests at 175% of design load.

• **Claims for Aluminum**—Aluminum claims these advantages for its bridge:

- Almost no expensive forms are needed for the concrete roadway.

- Stressed-skin design yields great torsional rigidity and permits the use of a lighter concrete slab.

- Standard cells can be combined into bridges of various widths, are easily transported by truck in finished form.

- They can be erected rapidly by small crews with simple machinery.

- They require no field fabrication, no shop painting.

All these things convince aluminum men they can be competitive—if they sell smartly—even without the advantage you'd think would be their strongest selling point: the fact that aluminum's corrosion resistance should cut, if not eliminate, the need to paint the bridge regularly.

III. Roads Control Bridges

Skeptics say the Fairchild bridge is overdependent on standardization.

They argue that to compete in cost, aluminum needs efficient mass production—which depends on standardization.

And standardization of highway bridges, steel fabricators insist, is illusory—wonderful if you could get it but, as a practical matter, quite unlikely to be achieved.

"When you resort to extreme shop fabrication, as the Fairchild bridge does," says one steel fabricator, "you must have a highly engineered product. To get your engineering costs back, you must fabricate many units. To sell them requires standardized bridges—and that's a concept no one ever has been able to sell successfully."

- **Angles**—Why not? Apparently the answer lies with the highway designers.

If every overpass or underpass crossed at a right angle—and in a dead level plane—standardized small bridges would be simple. The trouble is, they almost never do—nor, apparently, are they likely to.

Road designers seem to figure that for bridges under, say, 200 ft. long, it's better and cheaper to adjust the bridge to road demands than to adjust the road to the ideal bridge. Right-angle crossings mean curves, and curves are unwelcome on high-speed, high-volume roads.

It doesn't necessarily follow that a longer bridge will command the road



Facilities of New Bowaters Carolina Corporation's Catawba, S.C. Pulp Mill include (left to right): Water Filtration Installation, Caustic Plant, Wood Preparation Facilities, Digesters, Brown Stock Washers, Bleach Plant, Pulp Dryer Building and Shipping Dept.

NEW BOWATERS CAROLINA CORP. MILL TO UTILIZE 75 "BUFFALO" PUMPS

An order of this size from Bowaters Carolina Corporation reflects the confidence of many major paper producers in the performance of "Buffalo" Pumps.

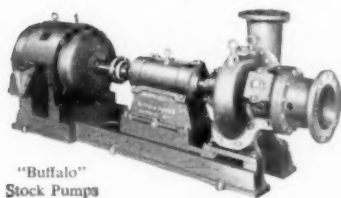
Over half of the 75 units are "Buffalo" Stock Pumps. These will be used to handle stock, black liquor and white water. A quantity of "Buffalo" Double Suction Pumps will be used for general services, including mill water service, fire protection and white water. "Buffalo" Single

Suction Pumps, furnished in 316 stainless steel, will handle chemicals.

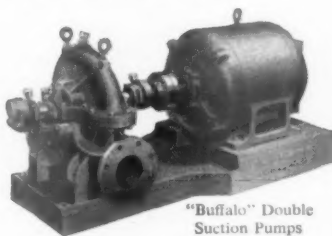
Whatever *your* type or size of plant... whatever *your* liquid-moving problems... you, too, can place complete confidence in "Buffalo" Pumps to perform with the utmost efficiency, dependability and long-lived economy. For full details, contact your nearby "Buffalo" Engineering Representative — or write us direct, outlining your problems.

Every "Buffalo" Pump brings you the famous "Q" Factor — the built-in **QUALITY** which provides trouble-free satisfaction and long life.

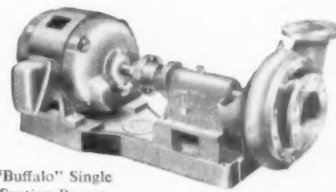
BIG BOWATERS INSTALLATION INCLUDES:



"Buffalo"
Stock Pumps



"Buffalo" Double
Suction Pumps



"Buffalo" Single
Suction Pumps



BUFFALO PUMPS

DIVISION OF BUFFALO FORGE CO.

458 Broadway • Buffalo, New York

Canada Pumps, Ltd., Kitchener, Ont. • Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

(Advertisement)

DEPRECIATION METHOD ON OLDER BUILDINGS OFFERS TAX ADVANTAGE

A corporation bought a prime office building that was several years old and called in Marshall and Stevens to discuss the application of appraisal techniques, to determine the best applicable legitimate depreciation procedures. By appraisal of various component parts which made up the structure, a series of basic figures was established and depreciation applied separately to each. In this manner more rapid depreciation proved allowable on certain less durable components, and the resulting write-off in this instance will amount to about 70% in the first half of the building's estimated remaining life. This application of the services of a recognized appraisal firm can result in tangible, immediate tax advantages in many cases.

APPRAISALS FOR SPECIFIC PURPOSES

The foregoing is but one of many applications in which appraisals and valuation survey procedures prove their immense value. Costly time in tax matters and in business negotiations can be eased by anticipating the need for and ordering a qualified appraisal before the need arises.

Marshall and Stevens, experienced appraisers, are qualified to analyze your particular valuation problems, and prepare appraisals for the following purposes: fair market value, fair rental value, mergers, purchase and sales surveys, refinancing, insurance, proof of loss, property ledger tie-in, tax accounting, tax assessment; income, inheritance, gift and catastrophe damage tax claims.

The informative booklet "Purposes of Appraisals" is yours for the asking. Write Marshall and Stevens, 420 Lexington Ave., Dept. 224, New York 17, New York.

An international appraisal company, Marshall and Stevens offers local personalized service. Offices in Chicago, Cincinnati, Dallas, Denver, Detroit, Honolulu, T.H., Houston, Los Angeles, Minneapolis, New York, Philadelphia, Phoenix, Richmond, St. Louis, San Francisco, Vancouver, B.C.

design, either. The longer it is, the more likely it is to require configurations that, up to now at least, only steel has provided.

- **Doubts**—Steel fabricators argue, too, that aluminum in bridges is an unknown material; they doubt that, unprotected, it will be so corrosion-resistant as to be maintenance free. They contend that the Fairchild bridge uses a material that is designed right up to its limit, while steel has a dozen ways to go in bettering its design practices.

Finally, steelmen say flatly that aluminum is kidding itself if it believes a cost ratio used in connection with the Fairchild announcements—putting the cost of structural aluminum in place at about \$1 per lb., vs. 20¢ for structural steel. Today, steelmen note sadly and bitterly, considerable simple steel construction can be had for 13¢ in place.

IV. Tough Competition

To some extent, steel's reactions to the Fairchild bridge have to be defensive—and a shade wishful. Here's why:

- Steel has lost business—probably a good deal—to pre-stressed concrete in the last three years.

- Volatile prices of fabricated structural steel, and a tight structural steel supply, have driven roadbuilders into other materials.

In 1955, steel figured demand for structurals would sag—but it went through the roof; no new wide-flange beam capacity had been installed for about a generation. So, in the 1955-56 boom, more people wanted structurals than could get them. Fabricators, limited in physical volume, took their share of the boom in higher prices.

Pre-stressed concrete was then becoming much more widely known, and more available. Highway engineers switched to it—probably faster than they would have adopted so new a material in a normal steel market.

Today, it's true, things have changed. Considerable wide-flange beam capacity has been added, and there are ingots enough to run those mills to exhaustion. Roadbuilders' money buys more steel; delivery times are shorter.

- **Backer**—But there's another hitch for steelmen. The Bureau of Public Roads can't favor one material over another, but as the technical group watchdogging billions of tax funds, it can encourage alternate—and competitive—materials. That's just why it's a sponsor of the Fairchild bridge.

Some responsible steel people tell you BPR isn't much impressed with aluminum bridges. But there were BPR people at the Fairchild announcement sessions who plainly wanted more competition in bridges and considered the Fairchild concept promising. **END**



Choose the Fastest* Growing Area in the Nation!

San Jose, California, in Santa Clara County... **FIRST** in rate of growth since 1950. For example:
Population up 85.2%
Mfg. employment up 83.2%
Retail sales up 130%

It pays to locate your industrial plant in this pleasant community at the southern tip of San Francisco Bay. The year 'round mild climate attracts top quality labor, including skilled technicians. In this market center of the West, distribution costs are at a minimum and extra profits soon pay off the plant investment.

Make your next move to Santa Clara County, California.

*Sources: U.S. Census, SRDS, ABC, California Dept. of Employment & Sales Management.

TODAY—send for these two outstanding reports on Santa Clara County, California and its major newspaper, the San Jose Mercury and News: **"UP AND COMING BILLION DOLLAR RETAIL SALES MARKET"** and **"NEW INDUSTRY SPEAKS"**.

Greater San Jose Chamber of Commerce
Department 7, San Jose, California



Business Giving Stays High

● Despite the lean recession year, corporate donations may come close to 1957's \$520-million.

● Generally, company foundations have made no cuts, but individual givers have eased off a bit.

● The trend is toward more generosity to education, less to health. And the donors get choosy.

Business, both large and small, has long since become one of the main pillars of charitable giving in the U.S. Increasing steadily over the fat years since the war, corporate giving climbed to \$415-million in 1955, broke the half-billion mark in 1956, and hit an estimated \$520-million last year.

The donations from business have come to make up more than a third of the total collections by community chests and United Funds, while in gifts to college operational funds, the corporations are second only to religious denominations.

• **End of the Climb**—This growth of giving came in a series of fat years—but 1958 has been a lean year. To find out what the pinched first half—with corporate net income off something like 50%—has done to giving, BUSINESS WEEK reporters in many cities took a wide sampling of companies.

Generally, they found the belief that last year's \$520-million would be closely approached, but that the long climb had stopped. In more detail, the reporters found this situation:

• With companies that have set up foundations to handle their giving, the flow of charity has held steady. Frequently, the company this year is putting less into the foundation; but by using its reserves from better days, the foundation has been able to make up the difference.

• Companies that do their giving directly have held up their end fairly well, but there is a reduction, especially among the smaller businesses that operate on thinner margins.

Many of the companies are much choosier about who gets the money, are using the recession as an excuse to lop off from the list charities that they consider to be wasteful or of dubious value.

A few companies, though, struck an ominous note for the organized charities and professional fund raisers when they suggested that giving may not now swing up with the recovery of business. Said one Los Angeles executive: "Now

we are still giving based on those good old 1957 earnings. Next year's gifts will represent what we earned this year."

I. The Big Foundations

Corporations have been setting up charitable foundations at a great rate. Statistics on them are iffy, but insiders figure today they number around 7,000.

For the corporation, there are definite advantages to lumping all its giving into one sum, and then letting the foundation parcel out the money among assorted educational, welfare, health, and other agencies. It saves the company trouble, saves it the embarrassment of saying no, and has some definite tax advantages.

This means that in good years for the company, the foundation will get a big piece of money, big enough so that it can hold some over for future calls. Some companies even fund their foundations with stock, whose dividends in big years add to this reservoir. Actually, this year has been the first one to test the reservoir potential of the foundations; they seem to be doing nicely.

Shell Oil provides a good example. The company expects to make a smaller-than-usual contribution to the foundation, but the foundation is upping its giving about 20%. The foundation set up by a Midwestern glassmaker will maintain its usual giving, though its intake has been cut by tumbling profits.

II. The Direct Givers

The companies that have not set up foundations—including, of course, the vast majority of the smaller outfits—express little likelihood of maintaining the pace of the foundations. For the individual givers, a steep dip in profits is bound to be reflected in donations.

Many companies reported such cuts. Barium Steel, based in New York, says its 1958 contributions are down by 80%. An Eastern oil company reported cuts last year and more coming in 1958, then added plaintively, "We're

trying, but you have to have the resources before you play Santa Claus."

Similar stories were told by fund-raising organizations. The Kentucky Independent College Foundation, which seeks funds for eight liberal arts colleges, tells of one company that gave an annual \$4,000 for four years, dropped to zero in 1957, and came back to a modest \$100 this year.

• **Greater Needs**—For a good many companies, giving has become very difficult but at the same time management has felt that the need was greater than the squeeze. An aviation company spokesman said, "The need is greater when business is bad, and we just can't see where we can cut any of the gifts."

The feeling has been gaining ground that giving, however grudgingly, has become an "unavoidable" cost of doing business. Sometimes grudging becomes bitter; a Kentucky manufacturer spoke of being "blackjacked" into donations when his profits were tobogganing.

Whatever the attitude, there's a general feeling that fund raisers will have to scratch harder to maintain their volume. Said a spokesman at national headquarters of the community chest drives: "I don't think there'll be a decline in corporate giving, but it will be a lot harder to get the money this year." In Detroit, despite a star-studded committee of auto leaders, the United Foundation Fund expects a "rough year."

III. The Long and Beady Look

Generally, even the most generous givers are becoming more choosy. Checkbooks aren't whipped out at the first request. Instead, there are searching questions. In Ohio, a company goes so far as to have its own engineers go over building plans before it will contribute.

A few companies said the recession was really just an excuse for the closer scrutiny, that they had become too sloppy in larding out money and would have had to slow down anyway. The vice-president of a Milwaukee manufacturing company called the downturn the final shove that made his outfit lop from its gift list organizations duplicating work of other recipients, or "on the fringe—such as organizations for a rare and obscure disease."

The "rare and obscure disease" complaint was rather widespread. In Ohio, a manufacturer, with sales of \$500-million a year, reports it frowns on "the small, highly specialized research found-

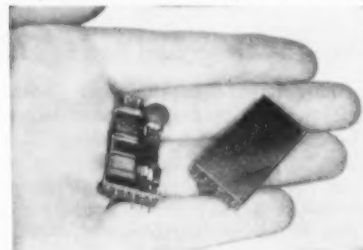
Progress through diversification —soundly planned and integrated

A report on the present operations and future plans of Yuba Consolidated Industries, Inc.

From J. L. McGara, President



Yuba Manufacturing Division, Benicia, Calif.—Produces and fabricates many heavy items for the petroleum, chemical and power industries.



Yuba Systems Division, San Carlos, Calif.—Develops and manufactures many types of electronic components, special-purpose computers, etc.



Adasco Division, Buffalo, N.Y.—Serves chemical, petroleum and power fields (both hydro and steam) with a wide variety of items of steel.

In little more than a year and a half, Yuba's corporate picture has changed radically. So, to bring you up-to-date, we'll outline what Yuba is today, how we operate and where we're going.

As you glance through this report, you'll note the central idea of Yuba's new corporate character: diversification. We would like to outline here how it has been accomplished under a carefully thought-out, long-range plan of benefit to our customers, our shareholders and our employees.

Yuba's diversification plan

Mining is, and will be, important in the Yuba plan. We're continuing exploration for new mineral deposits.

The nation's expanding economy means more building — of roads, utilities, plants, etc. And our steel producing, engineering and fabricating facilities contribute in these fields, particularly in the chemical and petroleum industries.

National defense creates a continuing need for electronic components, computers, missiles systems, small motors. These are provided by our Systems and Dalmotor Divisions.

In the consumer fields, the increasing leisure time of Americans creates a market for our Shopsmith and Choremaster products.

Yuba's integration plan

Yuba's operations are welded into an efficient organization on the line-and-staff principle. The divisions have practical operating autonomy. Yet all draw on the planning, financial, marketing and advertising resources of the central management staff which integrates all divisions.

Additionally, Yuba's Research and Development Center does pure and applied research for all divisions.

This "integrated diversification" has proved to be of real benefit to our customers, who often now find their overall needs can be coordinated and served within the Yuba organization.

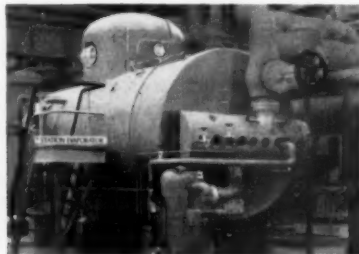
What Yuba's policies have meant

That our operations have met the needs of our market is reflected in our sales growth. In 1956, net sales were \$8 million. In 1957, \$22 million. Projected for 1958: \$36 million.

We believe this is a good demonstration of the value of our policy: *progress through diversification — soundly planned and integrated.*

YUBA CONSOLIDATED INDUSTRIES, INC.

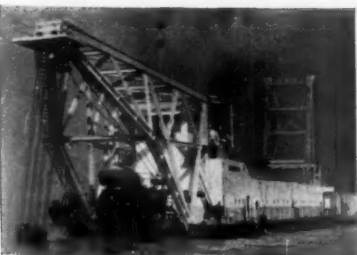
351 California Street, San Francisco 4, California
Sales Offices and Representatives in Principal Cities



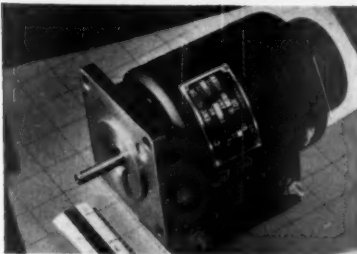
Yuba Heat Transfer Division, Honesdale, Pa.—Specialists in condensers, heat exchangers, etc., for the power, chemical and petroleum fields.



Judson-Pacific Murphy Corp., Emeryville, Calif.—Fabricates and erects heavy, medium and light structural steel for bridges, buildings, etc.



Yuba Mining Division, Benicia, Calif.—Conducts all of Yuba's mining operations, designs and sells dredges and a number of allied items.



Dalmotor Division, Santa Clara, Calif.—Produces a variety of special-purpose fractional horsepower electric motors and servo-mechanisms.



Western Rolling Mills Division, Tempe, Ariz.—This new Yuba division will bring steel-making and steel rolling facilities to the Southwest.



Yuba Power Products, Inc., Cincinnati, Ohio—Produces Shopsmith and Choremaster consumer products for the homes and farms of America.



Yuba Research and Development Center, Benicia, Calif.—Conducts research for all divisions, for the military and for general industry.

dations" working on diseases that are uncommon but have "strong emotional appeal." This same company says it is cutting down on research groups "which we know have not made use of what government money is available."

• **Education's Gain**—The broad trend of giving has shown changes as marked as those in the scrutiny of individual requests. Notably, there's a clear tendency to allot more money to educational institutions, while cutting down on health agencies. Presumably, the success of the Sputniks gave a hefty shove to this attitude.

The examples are numerous. An airplane maker says 65% of its giving this year will be to education; last year the schools split 50-50 with community welfare agencies. A California oil company will turn all its new giving over to education.

The results show clearly. A survey by the Council for Financial Aid to Education, covering 275 major companies, found that in 1950 only 17% of their total giving went to education; in 1956 the figure was 34%.

This year, total business giving to education is expected to hit \$150-million.

• **The Losers**—Although most companies deny that this money going to colleges comes out of the mouths of other worthy causes, statistics in the Chicago area indicate that education's gain is definitely other charities' loss. Business giving to the University of

Chicago topped \$2-million in the last academic year, just about double the previous year; Northwestern University this year is expected to get "several hundred thousand dollars" more from corporations than the year-before \$1.3-million. At the same time, this year's March of Dimes collection from business fell to \$190,013, from \$223,640. And the Heart Fund got \$224,528, down from \$271,578.

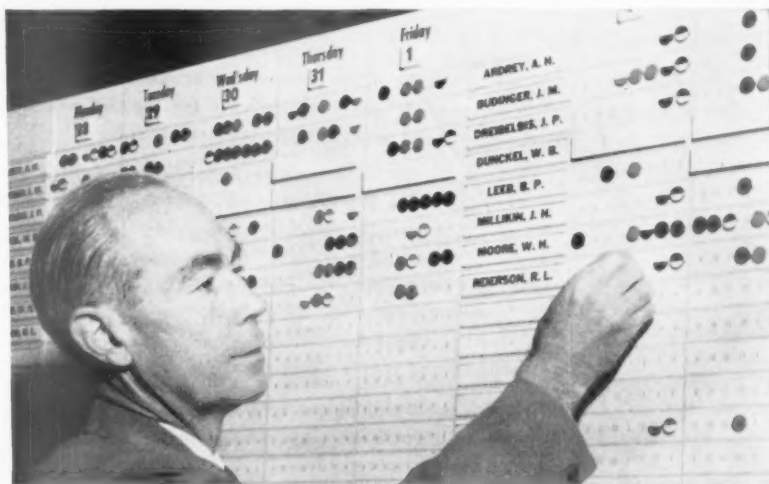
IV. Quirks and Caprices

The scientific examination of giving has not extirpated the human element.

In one city, the local symphony and art museum get handsome gifts from a company—the president's wife fancies herself as a patroness of the arts. In Atlanta, an executive says, "Just mention underprivileged children to the boss and you've got a donation."

A Toledo company likes to help out the off-beat organizations outside the community chest, ones that "might not generate too much support by the man-on-the-street." One beneficiary: the Planned Parenthood League.

Quite a few companies have sought shelter from the bombardment of solicitation by giving only to local charities, especially those in the community's united drive. In a Chicago suburb, a manufacturer carries the local idea to a point where it will give only to charities in its own suburb; Chicago proper is out of bounds.

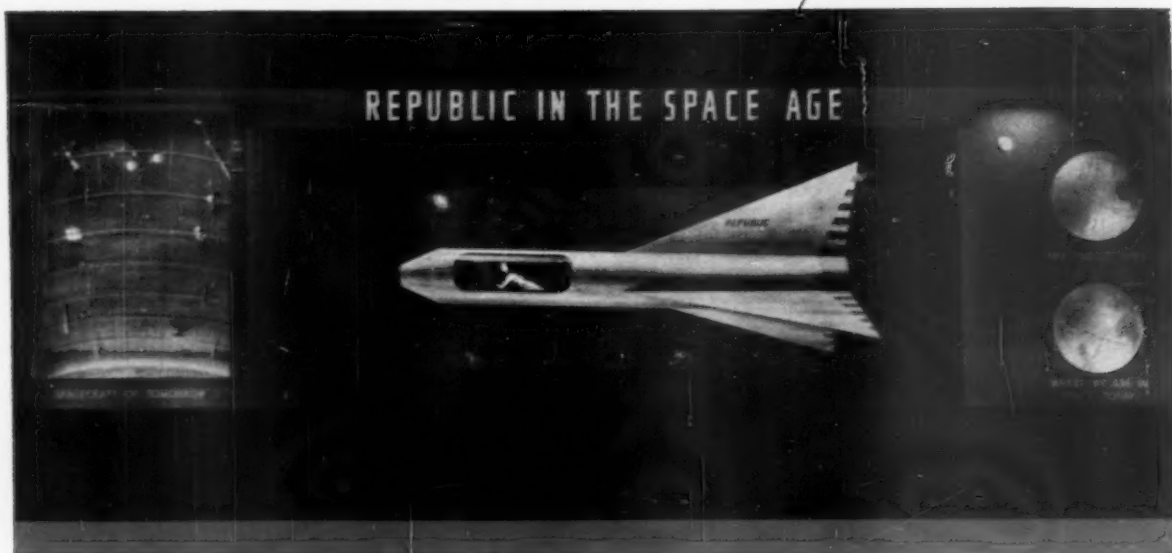


Plotting an Executive's Time

Bankers Trust Co., New York, uses this scheduling board to keep track of its top men and pin them down for executive meetings. Developed by the bank's Methods Research Div., the magnetic board works this way: Executive floor administrator Albert L. Rice gets word from the executives' secretaries when the men make appointments;

Rice covers up the appropriate time on the men's slots (picture) with magnetic buttons to show how long they'll be busy and what kind of dates they have. One call to Rice reveals what free time the executives have for the next three weeks, when a conference can be scheduled with maximum attendance.

American Museum-Hayden Planetarium, New York, foremost showcase for the world of space, has just installed an exciting new exhibit titled "You in the Space Age."



This glimpse of the future symbolizes Republic Aviation Corporation's purposeful advance into Astronautics. This advance . . . part of a new \$35,000,000 four-year Research and Development program will provide the brainpower and laboratories essential to produce scientifically accurate, basically sound ideas for the conquest of space. From these ideas, Republic technical skills will develop and produce needed products . . . and get them into space.

At the same time Republic's position as producer of "The World's Most Powerful One Man Airplane" remains unchallenged. The F-105 Thunderchief, most advanced of all USAF fighter bombers, is the subject of intense daily study by some 1400 Republic engineers always improving, developing, and diversifying the F-105's capabilities, thus further strengthening the nation's and NATO's air arm.

Research and Development is the keystone of Republic stability . . . a warranty of Republic's future . . . a reassurance of national security.

REPUBLIC  **AVIATION**

FARMINGDALE, LONG ISLAND, N. Y.

Designers and Builders of the Incomparable **THUNDER-CRAFT**



In Management

• • •

Arthur Vining Davis Sets Up New Florida Real Estate Outfit

Arthur Vining Davis is going to the public for cash to develop his Florida real estate. The 91-year-old founder of Aluminum Co. of America and recent accumulator of Florida property (BW-Dec.7'57,p172) is putting most of his Peninsula State holdings into a new operating company, Arvida Corp. The \$100-million outfit will get 100,000 acres of land from Davis, who will get most of the company's stock. It is planned that an additional \$25-million to \$35-million will be raised through a public stock offering, but there may be a delay. The Securities & Exchange Commission claims the company has offered Arvida shares by mail prior to SEC registration, and has sought a temporary injunction to stop any further such offerings.

Arvida will be the largest real estate operation in Florida, will own more land in Dade County, for example, than any other private owner. After the stock offering, the company will launch plans to turn the largely undeveloped land into residential communities and industrial parks.

• • •

Chief Executive Title at Goodrich Goes From Chairman to President

J. Ward Keener (picture) is about to become the boss at B. F. Goodrich Co. President since August of last year, the 50-year-old Keener becomes chief executive officer when Chmn. John L. Collyer, just turned 65, resigns that authority, Oct. 1. However, Collyer will continue as chairman.

Keener came to Goodrich in 1937 as director of business research, after serving as an assistant professor of economics at Ohio Wesleyan University. He became vice-president in charge of employee relations in 1946, executive vice-president 10 years later. He was an industry member of the Wage Stabilization Board in 1950-51 and an adviser on civilian personnel to the Army in 1955-56.



In other executive appointments:

- Roy Fruehauf, president of Fruehauf Trailer Co., stepped up to the chairmanship that has been vacant since his brother left the slot five years ago. Executive Vice-Pres. William E. Grace becomes president, but Fruehauf continues as chief executive officer.

- Robert H. Morse, III, became president of Cana-

dian Fairbanks-Morse Co., Ltd. He succeeds his father, Robert H. Morse, Jr., who is president of Fairbanks, Morse & Co., the U.S. maker of pumps and diesel engines, and the announcement of the election came from his grandfather, Robert H. Morse, Sr., chairman of both the Canadian and U.S. firms. Robert Morse, III, had been the youngest vice-president of the U.S. company, which does not directly hold any stock of its publicly owned Canadian counterpart.

- John B. Bertero, vice-president and general counsel of National Theatres, Inc., becomes president and chief executive officer. He succeeds Elmer C. Rhoden, who moves up to chairman. Appointment of two new vice-presidents and of investment banker B. Gerald Cantor as chairman of the executive committee clears the way for National, a holding company for some 300 motion picture theaters, to diversify into other areas of the amusement business. The company is negotiating for purchase of National Telefilm Associates, Inc., a television film syndicator.

• • •

Vitro Minerals Merger Falls Through As Antis Win at Susquehanna Corp.

A proxy showdown was averted, but the dissidents at Susquehanna Corp. won their point, and they aren't ready to rest yet. The group was organized to oppose the purchase of Vitro Minerals Corp., a uranium mining firm. Susquehanna, a holding company, owns a uranium ore concentration mill and electric railroad and bus systems in northern Illinois and Wisconsin.

Proxy solicitation and stock purchases caused such a flurry that Vitro's owners, Vitro Corp. of America and Rochester & Pittsburgh Coal Co., withdrew the offer because of the "discord" within Susquehanna.

But investment broker J. Patrick Lannan, who organized the Susquehanna dissidents and claims that his group owns more than 40% of Susquehanna, has other objectives now. He wants the company listed on a stock exchange and to throw out the stagger system of electing directors.

• • •

Management Briefs

Standard retirement age in the future will probably be older than the present 65, perhaps as high as 75. At least, that's the opinion of half of the 162 company presidents interviewed by Dun & Bradstreet. They think that, as the lifespan grows, the cost of pension plans will become prohibitive. Later retirement "may be the most satisfactory solution to control costs," they say.

Merger between American Bosch Arma Corp. and Northrop Aircraft, Inc., is practically a certainty. After four months of negotiations, almost all hitches have been smoothed out, and the stockholders of the two companies will probably be asked to vote on the proposition early next year. Northrop's Pres. Whitley C. Collins will be chairman and chief executive officer of the merged concern, and C. W. Perelle, president of Bosch Arma, will be the president. Collins denies a rumor that, after the merger, the company will try to buy a "small auto manufacturer."

Slichter Challenges Fed Policy

IS THE business recovery progressing at the right speed?

Too slow, say the labor people, looking at unemployment figures that are still at their highest since 1941—nearly 5-million, or 7.6% of the labor force. And many businessmen, eager to get their plants back to higher operating rates, agree with this appraisal.

Too fast, says the Federal Reserve Board, worrying about future inflation. The Fed has made it clear that it doesn't intend to let those unemployment figures prevent it from switching back, right now, to an anti-inflationary policy.

The Fed now thinks it moved tardily to head off inflation after the 1953-54 recession, and this time it's not waiting for prices to start climbing. "Inflation is not merely a phenomenon of rising prices," M. S. Szymczak, a member of the Fed's Board of Governors, declared last week. "Indeed, if we wait until that stage is reached, we will have waited too late to be effective against the inflationary pressures that brought about the price increases."

THE PROBLEM of whether government policymakers should aim at moderating the recovery—to forestall inflation—or at speeding it up—to mop up unemployment—has the makings of a major political issue. Last week, for instance, Harry Truman, at the Steelworkers' convention in Atlantic City, ridiculed the Administration for saying that the recession was over. The 5-million who are still unemployed don't agree, said Truman.

Into this argument, with a fresh and nonpartisan view, comes the distinguished Harvard economist, Sumner Slichter—a man with a reputation for calling 'em as he sees 'em, no matter who it pleases or displeases. Earlier in the postwar period, he offended labor people with his thesis that we now have a "laboristic" economy and that inflation is caused largely by union pressures. His argument that creeping inflation is inevitable in the U.S. economy's present political-economic-institutional setting did not please conservatives and sound-money types. His position

that the vicious old business cycle is a thing of the past hasn't pleased many of his congenitally anxious fellow economists.

At this juncture, with the fight developing over the pace of the recovery and over the issue of whether policy ought to be aimed mainly against inflation or against unemployment, Slichter launches his new thesis: **Prices are likely to rise almost as much during a slow recovery as during a quick one.**

"I do not think," Slichter told **BUSINESS WEEK**, "that the difference is great—certainly not great enough to justify artificially prolonging a recovery." Therefore, Slichter concludes, the Fed is waging a feckless assault that will have slight effect on prices but will mean prolonged hardships for the unemployed, loss of production, and a lag in the growth of capacity.

In an article for *Nihon Keizai Shimbun*, a Tokyo newspaper, Slichter declares: "Never in monetary history has a central bank ventured to tighten credit under conditions similar to those that exist today in the U.S. economy."

THE CONDITIONS that make the Fed's action unprecedented, Slichter notes, include these:

- The economy is producing at an annual rate \$10-billion below last year and about \$25-billion below capacity.
- The liquidation of inventories is still going on.
- The level of farm prices has been dropping, and the index of nonfarm prices at wholesale hasn't changed significantly in a year.
- Bond prices have recently declined substantially.
- Business loans of banks in the Federal Reserve show only a modest expansion.
- Unemployment is running at the highest rate in many years.

"The most reasonable interpretation of the recent changes in Reserve policy," says Slichter, "is that the Reserve authorities believe that the commercial banks will be less aggressive in seeking loans and investments if the volume of free reserves is kept fairly small. . . ."

By these policies, says Slichter, the Fed "may well cause recovery

to full employment to be stretched over two or three years instead of occurring in a year or a year and a half." In doing this, Slichter charges, the Fed "is virtually assuming the authority to set aside the Employment Act of 1946."

MOREOVER, says Slichter, the object of this policy—to prevent inflation—is unlikely to be realized. To measure the effect he sees, Slichter put some numbers down in a letter to the *New York Times*—numbers that he describes as "hypothetical . . . but probably close to reality." With a two-year recovery, he suggests the price level would be 3% above the present level; with a one-year recovery, it would rise 3.5%.

Behind this conclusion is his notion that prices would rise faster in the first year of the fast recovery—2.5% compared with 1.5% during the first year of a slower two-year recovery—but that, at full employment, the Fed could then turn on the screws and hold inflation to a further 1% rise. Indeed, Slichter holds, that's exactly when the Fed should move more firmly, because then "further increases in credits will not add to output or employment but will merely finance a rise in prices."

SLICHTER isn't at all sure the Fed can stick to its guns. "Perhaps," says he, "the Federal Reserve's effort to defeat the policy of the Employment Act of 1946 will, in turn, be defeated by the commercial banks." As business improves, he suggests, the banks may give preference to their regular customers and make "only meager increases" in their investments in government securities—in a year when the Treasury has a huge deficit to finance and one-third or more of the national debt to refinance. The Fed, Slichter suggests, might be forced to rescue the Treasury by increasing free reserves.

"Such an experience," Slichter notes drily, "would be a good example of how business, by minding its own affairs and by putting first things first, could exercise a whole-some restraint on the central bank."



man-on-the-spot

in Mexico City

Mexico City, Manila, Milan—around the world, wherever there's *business*, you're sure to find a Bank of America *man-on-the-spot*.

Through Bank of America's overseas branches, affiliates, representatives and

correspondents, a global network is at your service—speeding foreign information and financial transactions.

If these facilities could help your business abroad, why not write our International Banking Department about it?

BANK OF AMERICA

NATIONAL TRUST AND SAVINGS ASSOCIATION • MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION
HEAD OFFICES: SAN FRANCISCO 20 • LOS ANGELES 54 • BANK OF AMERICA (INTERNATIONAL) NEW YORK CITY 5

OVERSEAS BRANCHES: London • Manila • Tokyo • Yokohama • Kobe • Osaka • Bangkok • Guam • REPRESENTATIVE OFFICES: New York • Mexico City • Milan • Zurich
Paris • Duesseldorf • New Delhi • Havana • Rio de Janeiro • Beirut • Buenos Aires • BANK OF AMERICA—International: a wholly owned subsidiary! New York • Duesseldorf
Singapore • Paris • Beirut • Guatemala City • BANCA D'AMERICA E D'ITALIA: Milan • Rome • Genoa • Naples • Florence • Venice • 63 Branches throughout Italy

RAMBLER AND
METROPOLITAN
AUTOMOBILES

AMERICAN MOTORS CORPORATION

14250 PLYMOUTH ROAD
DETROIT 32 MICHIGAN

KELVINATOR
AND LEONARD
APPLIANCES

E. W. Bernitt
Vice-President—Operations
Automotive Division
AMERICAN MOTORS
CORPORATION



National Tool & Die Manufacturers Association
906 Public Square Building
Cleveland 13, Ohio

Gentlemen:

With American Motors, it is absolutely necessary that we contract with outside tool and die shops for most of our Rambler tool and die work. Because of variations in time and the amount of work involved in our new-model programs, it would be impossible for us to maintain the large tool-and-die staff and the machinery required to do this work.

Over a period of years we have developed a fine business relationship and feeling of mutual respect with many firms in the tool and die industry, and we feel that their success and ours will go hand in hand as the automobile business continues to grow and develop.

Very truly yours,

E. W. Bernitt

E. W. Bernitt
Vice President - Operations
Automotive Division

**"...it is absolutely necessary
that we contract with
outside tool and die shops
for most of our tool and die work"**

To get fast delivery of the most simple or complex tooling—
at fair prices—take advantage of contract tooling. You can call in several tooling
plants to take care of your large programs.



National Tool & Die Manufacturers Association

906 Public Square Building, Cleveland 13, Ohio

WRITE TODAY for NTDMA Directory of Member Plants and Services...an organization of
over 1,000 companies that design and manufacture special tools, dies, jigs, fixtures, gages, molds
and special machinery, and do precision machining; located throughout the U. S. and Canada.

**IT PAYS
TO GO OUTSIDE
FOR
SPECIAL TOOLING**

In Research

• • •

RCA Scientists Make a Big Noise, Colleagues Develop Electronic Earmuffs

One set of scientists at RCA has succeeded in developing a device they claim will make the loudest noise in the world, while another group has developed a set of electronic earmuffs for tuning out unwanted noises.

The earmuffs, a variation of the conventional earphone, were developed for the Army so combat soldiers can hear their orders. Working on the principle that two sounds in opposite phases will cancel out one another, the earmuffs are said to reduce exterior noise to a whisper. Also at RCA, a Compressed Air Loudspeaker that can squawk 20,000 times louder than a TV set at top volume is in final stage of development. The device initially will be used to test the vibration and sound sensitivity resistance of electronic missile parts. The CAL generates noise at 160 decibels and should be able to throw a human voice 10 mi. or more.

• • •

Researchers Bolster Evidence Of What Makes Cells Cancerous

Differences in the chemical composition of DNA (the material that determines a cell's genetic characteristics) in a normal cell and a cancer cell have long been suspected, because the cells are so different in their shape and function. Last week, in Rome, three U.S. doctors from the Sloan-Kettering Institute for Cancer Research and two doctors from the University of Milan presented evidence that strengthens the suspicion.

They extracted DNA from both the normal white blood cells of healthy persons and the cancerous cells of leukemia patients. They collected solutions of DNA from both sources on columns of cellulose filter material (much like that used in cigarette filters) and washed the filters with solvents to measure the different rates at which various components of the DNA would be removed. The tests showed regular and reproducible differences between the two kinds of cells.

Researchers will now push hard to define the difference chemically. After that, the next step would logically be to develop agents to interfere, selectively, with the formation of cancerous DNA.

• • •

In Space Travel, Algae Can Purify Air, Then Provide Food for the Voyagers

Photosynthesis—the process that replenishes oxygen in an endless cycle on earth—may soon enable man to travel for unlimited time under the oceans and in outer space. This prediction was made at the First International

Symposium on Submarine & Space Medicine, in Groton, Conn., last week. The speaker was T. A. Gaucher of Electric Boat Div. of General Dynamics Corp., which is working in this field with the National Institutes of Health.

Key to Gaucher's prediction is recent development of a new strain of algae that grows at a rate of 1,000 times a day, compared with only eight times for algae previously known. By thus accelerating their withdrawal of carbon dioxide from the air and giving off oxygen, these tiny plants could reduce the space needed for air-purifying equipment in a sub or space ship to 5% of the best previous estimates.

The algae method of producing fresh oxygen will work something like this: Cultures of the new strain of algae (in a solution about as thick as blood) will be pumped very rapidly past a pencil-thin stream of very intense light. By irradiating the algae (as sunlight does), the light will cause the algae to grow fast, speeding up the carbon dioxide-oxygen cycle. Besides, tests show that the new algae are secondarily useful as food rich in proteins and vitamins.

The algae were developed at the University of Texas. General Electric Co. perfected the new type of lamp.

• • •

Gigantic Ears Poised to Listen For Signals From the Radio Stars

The first of two 90-ft.-diameter "ears" went into place last week to listen to the stars. The "ear"—a radio telescope—was hoisted onto a 45-ft. pedestal at California Institute of Technology's new \$1.5-million radio observatory in the Owens Valley desert of California.

The desert site is ideal because the Sierra Nevada and White Mountain ranges on either side shelter the highly sensitive electronic ears from interference by manmade radio and television signals.

Like other radio telescopes now in operation here and abroad, the Owens Valley installation will catch signals from the so-called radio stars in its dish-shaped antennas and focus them to a point—just as a telescope mirror focuses light rays to a point. The signal will then be funneled to an amplifier and recorded.

Unlike its predecessors, however, the new set of "ears" will be movable in four directions—up and down railroad tracks 1,600 ft. long. Scientists believe this will make it possible to pinpoint much more accurately the location of the stars emitting the signals, through a technique known as interferometry.

The Navy—co-sponsor of the project with Cal Tech—has a keen interest in the relatively young science of radio astronomy, which is trying to develop instruments to place the position of the known radio stars. Only 50 out of an estimated 2,000 such stars have been identified. The reasons for this interest:

- Radio telescopes can make observations through clouds—in the earth's atmosphere or in space—that would make an optical telescope useless.

- Radio stars—if their exact location is known—can be utilized in navigating aircraft and ships and in tracking and guiding missiles and space vehicles.

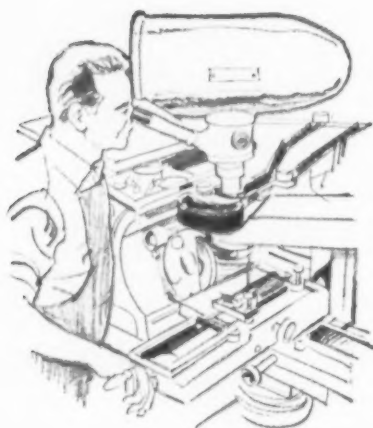


Strategy for the Years Ahead:

Competition will be fierce. Companies are hungry for sales; consumers won't buy unless price and quality are right. It will take efficient plant to meet these pressures —

page 76.

Why Industry Modernizes—and



The Technology That's Coming:

New tools and techniques that will cut costs are coming out of research.

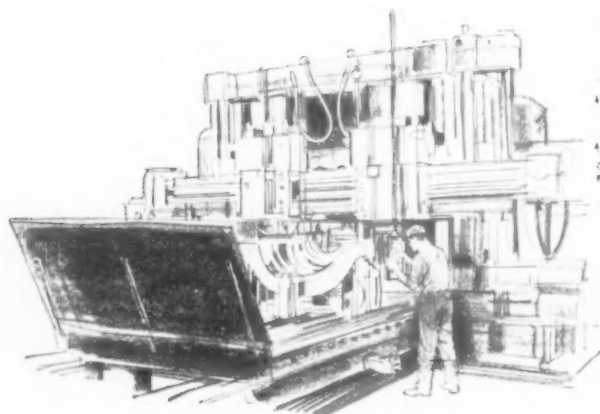
Watch industries that lead in research for guides to modernization —

page 82.

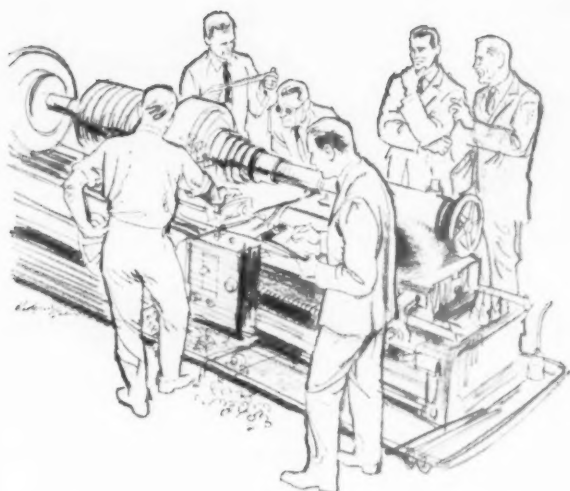
The Pressure for Modernization:

It runs through the whole range of industry. It's the road to growth for U.S. Steel (\$4.3-billion sales), De Laval Steam Turbine (\$28-million), and Diana Stores (\$36-million) —

page 88.



How It Does the Job



Management's Dilemma:

The problem of when to modernize is perhaps the most difficult area of management decision. But there are new approaches that can help —

page 100.

The Job To Be Done: To junk all that's obsolete would cost industry \$95-billion. To gauge the size of the job McGraw-Hill's Economics Dept. has made a new survey of industry —

page 121.

PLAN '59



"...The Most Intensive Kind of

It's 4:30 of a September afternoon, and Pres. Thomas Mulligan of Mulligan Mfg. Co. is sitting at his desk when his company economist, Edgeworth Polonius, enters carrying a heavy, finely printed document.

Economist—Good afternoon, chief.

President—Hullo, Ed. Come in and make yourself at home. How are things in the double-dome department?

Econ—Very well, indeed—considering how shorthanded we are. That's really a problem, of course. As I said at the last budget review, we can't get along indefinitely without another man who can run statistical projections. With the way the sales department is leaning on us—not that I want to discourage them, you understand—but they do ask us. . . .

Pres—Yes, of course. Well, I'm sure the committee will weigh the whole thing thoroughly. This is a year when we've all had to live on short rations. What's that imposing document on your lap?

Econ—This is the final report of our task force on forward planning—what you called the crystal ball committee. We had thought of giving it the title "Five

Years of Opportunity for Mulligan," but that seemed a little theatrical. So we just called it "Five-Year Forecast—1959-1963."

Pres—I can see a lot of work went into it. Can you give me a quick take on what it says?

Econ—Well, we make our projections of GNP on alternate assumptions, and we have plotted the results here as you can see. . . .

Pres—Yes, yes indeed you have. Very handsome chart. But are we going to start growing again or is the country stuck in this damned limbo?

Econ—Oh, the growth trend is bound to resume, bound to. You can predict that on the basis of population if nothing else. We passed the 175-million mark this year and even on the most conservative estimates we'll hit 185-million in 1963. Yes, even if you assume the worst breaks, the trend is still up.

Pres—Enough to put our St. Louis plant back in operation?

Econ—Well, that depends. St. Louis is an old plant, you know—a high-cost operation. That's why it was the first one we closed down. But now that we've worked inventory down where we want it, we'll automatically pick up a lot of our idle capacity. And we'll pick up more as the economy gets back on its growth trend. If GNP grows at the optimum rate we'll need additional



Competition"

capacity around 1961 or early '62. If it only grows at the minimum rate in our projections, we may still be running a little below capacity in '63.

Pres—Let's figure it for the minimum. I'm not buying any more pie-in-the-sky figures after the way we got clipped this year. And neither are the directors. How much overcapacity will we have in 1963, figuring on the minimum?

Econ—Well . . . I don't like to talk in terms of a precise figure without making all the qualifying assumptions. . . .

Pres—I know you don't, Ed. But make a guess. What would you say—15%?

Econ—Probably not much more than that. Even last spring we didn't go below 50%. We can figure on hitting 70% to 75% for the rest of this year. And if we get a 3% growth rate for five years that will put us back around 85%.

Pres—Eighty-five, eh? Well, we can live with that. Or maybe we can.

Econ—Ninety-percent is just about the most efficient rate as far as operating costs are concerned. But, of course, if the product is properly priced the profit margin on that last 10% widens out. You've already paid your fixed costs and everything you take in above out-of-pocket costs is pure profit.

Pres—That's all true. But what about prices? Are they going up?

Econ—We cover that on page, uh, 32. Let me read you: "In the period under consideration, prices can be expected to exhibit a singular, and perhaps somewhat disturbing, dichotomy. Raw material markets will be characterized by conditions of rising demand and relatively inelastic supply except at higher factor costs of production, with a pronounced upward trend in prices as the resultant. Fabricated product markets, *per contra*, will be strongly influenced by the elasticity of supply consequent upon unused capacity, and while rising costs may induce a gradual uptrend in the price necessary to evoke the marginal increment of supply, any marked development of such a trend will be inhibited by the operation of competitive forces."

Pres—What's a singular dichotomy?

Econ—Well, a dichotomy is a division into two parts or categories, as for example. . . .

Pres—Then how can you have a singular dichotomy?

Econ—Oh, I see. Ha ha. A neat little trap you set. I suppose there is a certain semantic confusion there. . . .

Pres—So. As near as I can make out what you just said was that raw material prices are going to go up and fabricated products—which is us—are going to be in trouble. It's the old squeeze again, cost increases and no way to pass them on.

Econ—It certainly is. I can't see anything but the most intensive kind of competition from now until the mid-sixties and beyond. The market's going to be there, but the producers are going to be there, too. And they'll all be a little bit hungry. They'll sell on price and they'll sell on quality and they'll sell on service.

Pres—And I suppose you'll scare me about wages, too?

Econ—Yes, let me read you what we have to say about that: "In practically all major industries labor is well organized, well led, and well financed. The pressure for regular wage increases of substantial size will continue unrelentingly. . . . It is unrealistic to assume that labor's drive for successive increases will not be at least partially successful."

Pres—I won't argue with you. But you still don't think we can pass any of this along?

Econ—Not much. The competition is going to be too rough. Our competitors have got just as much extra capacity as we have. If we try to pass along those extra costs, they'll all slide in and undersell us. If you turn your back for half a minute you'll get enough knives in it to start a cutlery shop. And, besides, the consumer is going to be too fussy.

Pres—What's the consumer got to be fussy about?

Econ—Well, he's a little stretched financially. He's locked into a pretty big mortgage debt. He's got a houseful of kids that are growing up and costing him so much that he has a hard time making a budget. Even if incomes keep rising there's a limit to how fast consumers can expand their purchasing. The chances are that they won't want to pile on installment debt as fast as they were doing just before the recession. A lot of people got hurt more or less severely this year.

Pres—Are they going to act scared all these next five years?

Econ—Not scared, exactly. It all goes back to a pet

**"We were proud of
OUR OWN STAMPING OPERATION
... until we discovered
WHAT IT COST US!"**

**MAKE
OR BUY**

**Evaluation
Study for
Stampings**

This free form helps you analyze stamping costs. Write nearest stamper for your copy.

Do you know what your stampings are costing you? You would if you sub-contracted your headaches* and bought stampings from specialists. Spurred by competition, specialists must give you the most for your stamping dollar. Let them make your costs competitive.

***Space
Die trouble
Rejects
Extra investment
Handling**

**Indirect costs
Tolerances
Machine repair
Setup costs
Inspection**

The American Stamping Co.
26650 Lakeland Blvd.
Cleveland 23, Ohio

Detroit Stamping Co.
350 Midland Ave.
Detroit 3, Mich.

H. K. Metal Craft Mfg. Co.
3775 Tenth Ave.
New York 34, New York

Northern Metal Products Co.
9595 West Grand Ave.
Franklin Park, Ill.

Worcester Pressed Steel Co.
100 Barber Ave.
Worcester 6, Mass.

**a complete moving service
FOR YOUR
PERSONNEL ...
DISPLAYS ...
AND OFFICE
EQUIPMENT**



More and more companies are learning that they can depend on Wheaton for truly safe, on time moving on their personnel transfers, display and exhibit, and office

equipment moves. That's because at Wheaton, safety comes first. Service to all 48 states, Alaska, Hawaii and other countries by land, sea and air. Next time, call your Wheaton Agent.



Free moving
day kit for
personnel transfers.

Free booklet for the
family "Moving can be
almost fun".



Wheaton
Van Lines, Inc.

General Offices: Indianapolis, Indiana

Over 500
Agents — all
principal
cities

In the West, call

LYON
VAN LINES, INC.

theory of mine about the great redistribution of income that took place during the war and the years just after it. In effect, what you did then was take the whole wage-earning group and pull it up to the level of the middle class. An enormous group of people had more money to spend then than they ever had before and they wanted things like refrigerators and washing machines and furniture. Those were the people who kept a sort of marathon buying boom going all through the late forties and most of the fifties. . . .

Pres—What happened to them? Nobody took them out and shot them.

Econ—No. But now they've adjusted to their new levels of income. They've bought a lot of the things they wanted and they don't feel new-rich any more. They're more careful about their buying, more price-conscious. If they don't think the quality and the price are right, they just don't buy.

Pres—Huh. You aren't what I'd call a cheerful little ray of sunshine. You give me cutthroat competition, idle plant, higher costs, and cranky customers. What do you want me to do? Sell the whole place and get out of business and put my money into government bonds?

Econ—You're joking, of course. But there are companies in almost every industry that would do better to liquidate and put their money elsewhere. They're the high-cost operations that can't hold the price line and make a profit, and the companies where the management is dead on its feet and can't adapt to the kind of market we're entering. A lot of those companies will wind up merging with somebody stronger than they are. Some will just sell their assets and get out of business entirely, and maybe they'd be wise to do it now—quit while they're ahead, you might say.

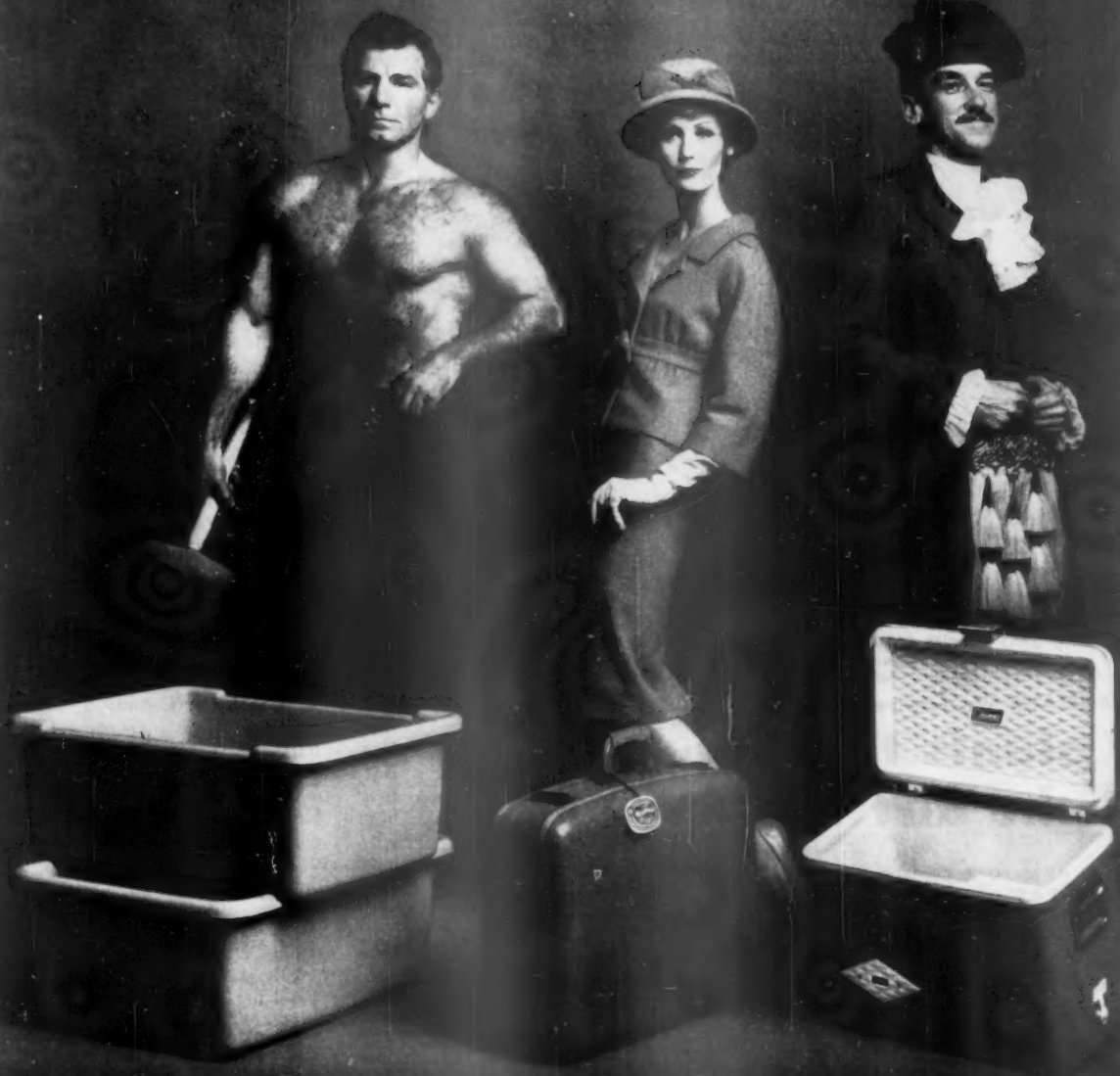
Pres—I don't like the feel of the whole thing. I don't know where you get this "Five Years of Opportunity" stuff. It doesn't sound much like that to me.

Econ—Well, chief, there is a wonderful opportunity for the company that can wheel in with a really aggressive selling campaign backed by realistic pricing and high quality. . . .

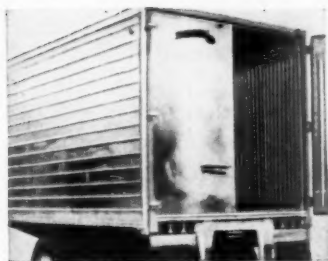
Pres—Why, sure. And there's a wonderful opportunity for the man who can sell dollar bills for 90¢. But we're geared to growth, and how do we keep growing in this wonderful world of yours?

Econ—I just said: The companies that will get the market and grow are those with the low costs and the high quality products.

Pres—You should have gone into the ministry. I can just hear you saying that the way to get to Heaven is to live a life without sin. Tell me, Padre, just



HOW ROYALITE SOLVES 3 BASIC DESIGN PROBLEMS: TOUGHNESS * BEAUTY * ECONOMY



Leading truck and trailer makers choose damage-free Royalite refrigeration panels that are easy to keep kitchen-clean... maintain stable temperature... keep weight at a minimum...and reduce cooling costs.

Royalite, most versatile of thermoplastic sheet materials, has proven itself time and again to scores of manufacturers... in hundreds of varied applications. **Toughness:** Tote boxes of Royalite have built-in resistance to hard knocks. Seamless, easily cleaned, no sharp edges to snag or splinter, quiet, impervious to oils, grease and most chemicals, really lasts. **Beauty:** luggage of Royalite allows modern concepts in molded designs... lightweight, pleasing textures, wide range of built-in colors, impact, scuff, and dent resistant, easily cleaned, lasts longer in travel. **Economy:** picnic cooler with pure white Royalite liner provides a

non-conductor material with built-in thermal breaker at no extra cost... seamless, easily cleaned, odorless, can't rust, deep drawn, modest equipment and labor costs, fabricating techniques permit use on popular priced items. Find out how you can benefit from U.S. Royalite. Let one of our plastics engineers call on you. There is no obligation. Write for information.

Tote boxes by United States Rubber, Luggage courtesy of Crown Luggage Co., Picnic Cooler courtesy of Coleman Co. Inc., Refrigeration Panels courtesy of Trailmobile, Inc.



Royalite®
A.B.S. THERMOPLASTIC SHEET



United States Rubber

2698 North Pulaski Road, Chicago 39, Illinois



SWEEPING ROADWAYS 4 TIMES FASTER than was possible before (with a smaller sweeper), the Tennant "100" efficiently cleans roadways at Port Huron, Michigan, plant of Peerless Cement Co.

New TENNANT Vacuumized Sweeper...

for plants that want to get **ALL the dirt ... *at low cost***

Have you ever seen such *clean* sweeping? It's a revolutionary **NEW** method for removing dust and litter from plant areas—with the **TENNANT Model 100 Vacuumized Sweeper**.

Gets all the dirt. Almost nothing ... from heavy sand, metal chips and litter to fine dust ... escapes the Model 100's powerful broom-and-vacuum system. Though it uses no water, it offers excellent dust control. Its 540 square foot filter removes particles smaller than the eye can see!

Sweeps 7'4" path at speeds to 9 mph ... and travels at a speedy 15 mph clip between jobs. Its ultra-clean sweeping, plus huge capacity put it in a class by itself.

Works in tight places. Despite its huge capacity, the Model 100 is compactly designed for efficient work in congested areas. For economical sweeping of yards, docks, large aisles and for salvaging valuable dust, it has no equal!

Ideal for industry. With its excellent dust control, giant capacity and easy handling, the new **TENNANT 100** is ideal for sweeping critical industrial areas where *extra clean* sweeping is desired. And for large plants with extensive roadways, it's a "must-investigate" machine.

WRITE TODAY for illustrated bulletins, photos and performance data. **G. H. Tennant Co., 703K N. Lilac Drive, Minneapolis 22, Minnesota.**



**Industry's Most Widely Used
POWER SWEEPERS**



Model 80 Sweeper cleans 33" path; recommended for heavy duty work.



Model 50 Sweeper cleans 40" path; ideal choice for most small plants.



Model 40 Sweeper cleans 32" path; excellent for congested areas.

how do we get low costs and high quality?

Econ—That's an operating problem, of course. The most important thing is the efficiency of your plant. That's always been the way to achieve lower unit costs. And speaking of capital efficiency, my department would be happy to undertake a study. . . .

Pres—Now I'll grant you that if we could get our costs down a little, we'd be the ones that set the pace for the competition. . . . You know, Ed, maybe you do have something with this opportunity idea. Maybe this really is a moment of opportunity for us. . . .

Econ— . . . a study of the relative economics of alternate. . . .

Pres—The production boys have always said that with a new wire-drawing setup they could get costs at St. Louis in line with the other plants. But those machines cost money. . . . And there's no question we're using too much hand labor on the number eight model. Suppose we put transfer machines on that line. . . .

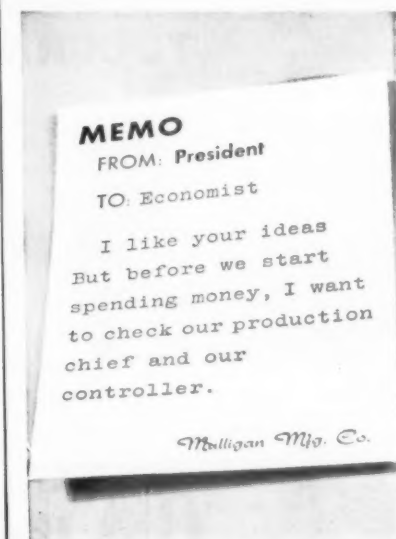
Econ— . . . I'm sure we could fit the study into our schedule.

Pres—What? Oh, thanks, Ed. Thanks. But I don't want to overload you. And that production crowd is a tough bunch. No. This one I'll handle myself. And now I guess that just about wraps us up. It's a splendid report, Ed. I know that from what you've told me. I look forward to going over it this weekend.

Econ—Thanks, chief. I think you'll find it a really solid job. Good night.

(Exit)

Pres—Miss Springsteel, would you come in and bring your book. I've got an idea, and I want to dictate some memos.



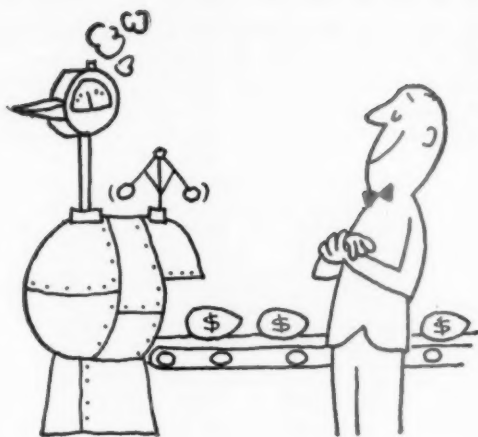
MEMO

FROM: President

TO: Economist

I like your ideas
But before we start
spending money, I want
to check our production
chief and our
controller.

J. H. Tennant Co.



1.

Dick Hewitt bought a new machine—and up production soared.
 “Unlimited capacity! I’m wealthy!” Richard roared.
 So output boomed and profits zoomed as Dick had prophesied,
 Until this goose that laid the golden egg blew up and died.



2.

“Insurance may repair the thing,” howled he, enwrapt in gloom,
 “But fixed expenses—normal profits? Heavy losses! Doom!”
 Enraged at Fortune’s fickleness, he phoned his Travelers man,
 The trusty agent said, “Chin up! You have a Travelers plan.



3.

“If your machinery blows its top, no need to blow your stack—
 Our Boiler and Machinery plan will keep you in the black.
 The Travelers pays expected profits and your overhead—
 Besides the cost of bringing a machine back from the dead,



4.

“Your man agreed to buy our plan when you were doing Europe.”
 “He gets a bonus!” promised Dick, his temper sweet as syrup.
 To keep your profits steady even when production’s stopped
 Seek counsel of a Travelers man—his plan cannot be topped.

THE TRAVELERS Insurance Companies

HARTFORD 15, CONNECTICUT

All forms of business and personal insurance including Life • Accident • Group • Fire • Marine • Automobile • Casualty • Bonds

MEMO

FROM: President

TO: Vice-President-
Production

What have the research
scientists come up
with that a company
like ours can use?
What ideas could we
borrow from other
industries?

Mulligan Mfg. Co.

Industry's equipment is constantly under attack; two kinds of obsolescence are always hacking away at its value. And right now one kind is hacking harder than ever before.

It's possible, if not always easy, to calculate and prepare for the first kind, the physical aging of machinery through sheer wear and tear. The government provides the figures to help industry depreciate its equipment. The depreciation charts make smooth comfortable curves, full of meaning for a company's tax statement.

But in the machine shop the charts don't have anything like as much meaning. There a machine is only as valuable as the work it does. And there the second



kind of aging—technological obsolescence—can strike like lightning. There's no predicting where it will hit next, nor any calculating its effect before it strikes. The one thing that is predictable about technological change is that it will strike industry harder and more frequently in the next decade.

• **Where Change Begins**—Out of five years of steeply rising budgets for industrial research—up from \$3.5-billion in 1953 to more than \$8-billion this year—is coming a flood of new and better machines, processes, controls, and materials for industry. These new products have been coming rapidly enough in the last decade. But when you allow the estimated five to seven years between inception of an industrial research project and delivery

From Research, Ideas

of new products it's easy to see that the pace of technological change is about to grow more intense.

As it grows faster it makes industry's simplest replacement problems more critical. Equipment that's replaced because of wear and tear is hardly ever succeeded by



machinery that does just the same job as the old equipment. Almost always the new machinery turns out more or better products than the old stuff could at the peak of its productivity and efficiency. And the new, more efficient machines cost substantially more than the old ones. Only in a few industries do machines truly wear out these days—in most, technological change makes them obsolete before they reach the end of their physical life.

I. Slow Changers, Big Spenders

To see what modernization is all about you must look to the industries that lead in this never-ending job of keeping productive plant up to date.

You'll find that some of those under stiff pressure to modernize are companies in the basic materials industries. The steel industry, for instance, has enormous investment in its plant. It must keep rebuilding and renewing its furnaces and mills lest deterioration in any part of the plant sap its productive strength.

• **Economics of Change**—But you won't find steel tearing down and rebuilding a mill to take quick advantage of a change in technology. Here as in most other basic industries, the cost of radical change usually outweighs the benefits a new process might bring. There was, for example, hardly a ripple in the steel industry when Bethlehem Steel Co. developed its radically different direct reduction process. Instead, the steel industry modernizes, bit by bit, whenever it gets a chance to rebuild one line of open-hearths or a blast furnace.

Much the same thing goes for transportation and for much of the metalworking business. Automobiles and methods of making them haven't changed radically in the last 30 years—no matter what has happened to outside appearances. Many of the same kinds of tools that were used in automobile plants in the 1930s are used today. Vast improvements have come in die and press design, in materials handling, in mechanization. But in even the newest auto plants there's no

That Turn Equipment into Junk

real change in the concept of how a car should be built.

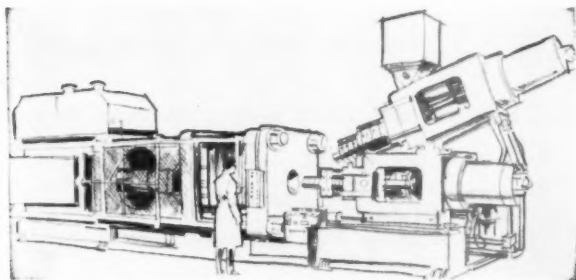
These slower-changing industries build up huge quantities of production equipment designed for a long lifetime. The research they do is more a hunt for engineering refinements than for new phenomena of physics.

But these industries still don't escape all the pressures of technological change. The lash of far-reaching technological advances in other industries whips back to them.

II. Leaders in the Race

It's in these other industries—led by aircraft, electronics, and chemicals—that technological change comes fastest and most sweepingly. These are also the industries in the forefront of research spending. And it's to them you must look for the best guides to technological changes that promise lower costs, higher quality, and more profits.

It isn't hard to understand why the aircraft, electronics, and chemical industries are way out ahead. Airplane builders today must make parts from metal that will



withstand temperatures of 1,200F—and they usually have to do the research themselves to find ways of forming this high-strength metal. When a chemical maker comes up with a complex new plastic, the plant he builds to produce it requires automatic measurement and control devices—and as often as not he must develop these instruments himself. In electronics, again, it's the leaders of the industry who are prime developers not just of new electronics products—but of the tools and processes needed to make them.

• **Cash—and Psychology**—The reason is, in part, that few instrument makers can afford to spend as much for instrument research as du Pont, Monsanto, Union Carbide, or other large chemical companies. Few toolmakers could ever hope to match the funds that aircraft builders put into research on metal forming techniques.

Technology in these fast-moving industries changes constantly. Their growth has been built on an almost unpredictable flow of new discoveries and new products. There's no steady groove of replacement and modernization for them to follow as there is for many of the basic industries. Instead, they often find that to meet competition, to get the most out of new discoveries, they have to rip out a plant before it has lasted half its expected lifetime and replace it with another that turns out an entirely new product. Without their



fast-paced modernization, these companies would quickly die.

Out of the effort they put into research and development come new machines and new processes that often are quickly adapted and fitted into the structure of other industries.

Today, two of the areas into which the fast-paced industries are putting great effort show high promise for a wide range of business—in machines for working metals and in controls for continuous stream production of chemical and oil products.

III. New Path for Metalworking

The airplane builders, backed by huge government research funds, are developing those new metalworking methods and machines. The auto industry used to be the bellwether of metalworking techniques. Now it's



far to the rear and the airplane builders are well ahead of the toolmakers, too. More and more, the aircraft plants are developing their own metalworking processes

MOTOROLA 2-WAY RADIO COSTS YOU NOTHING

Your drivers spend several minutes every hour in phone hunting, parking and checking in.

By eliminating just this, your Motorola 2-way radio pays for itself.

But that's not all! With radio contact and control, you can move your vehicles directly from job to job. There's less "dead-heading" and back-tracking . . . so each man can save enough time to make one or two *extra* stops every day. Here's real profit for you.

Add it up yourself. You'll see why Motorola 2-way radio costs you nothing . . . actually *makes money* for you, whether you have 1 or 100 vehicles. Why delay any longer? Let us show you in dollars and cents how much 2-way radio will save *your* business. Contact Motorola today.



IF YOUR DRIVERS SAVE 3 MINUTES AN HOUR

Here's the Proof—Even if your cost is as low as \$3.00 an hour . . . \$1.50 for the driver and \$1.50 for the vehicle . . . saving as little as 3 minutes an hour (\$1.20 per work day) is usually more than enough to pay for your radio, including amortization, installation and maintenance.



MOTOROLA 2-WAY

THE COMMUNICATIONS SPECIALISTS TO INDUSTRY AND GOVERNMENT

Motorola Communications & Electronics, Inc., 4501 Augusta Blvd., Chicago 51, Illinois • SPaulding 2-6500 • A Subsidiary of Motorola, Inc.

A few of the tens of thousands of **MOTOROLA** 2-way radio users

Motorola 2-way radio is selected more often than all others combined. Here's proof of Motorola's continued leadership in reliable communications.

American Can Company
American District Telegraph Co.
Argonne National Labs
Armour & Co.
Bridgeport Brass Co.
The Bullard Co.
The William J. Burns International
Detective Agency, Inc.
The Champion Paper & Fibre Co., Inc.
The Chicago Tribune Co.
Climax Molybdenum Co.
Clinchfield Coal Co.
Coca-Cola Bottling Co.
Container Corporation of America
The Dow Chemical Co.
Freeport Sulphur Co.
Fruehauf Trailer Co.
Gulf States Paper Corporation
Hercules Powder Co.
Jersey Central Power and Light Co.
Jones & Laughlin Steel Corp.
Kennecott Copper Corp.
Kimberly-Clark Corp.
Ladish Co.
Olin Mathieson Chemical Corp.
Midland Constructors, Inc.
Phelps Dodge Co.
Phillips Petroleum Co.
Reliable Packing Co.
Scott Paper Co., Inc.
Sherwin-Williams Co.
Trans World Airlines, Inc.
United Fruit Co.
United States Rubber Co.
Vanadium Corporation of America

RADIO

MEMO

FROM:

TO:

'59 PLAN

and designing and building their own tools.

They do have special problems—in many cases, they're working with metals that no other industry yet uses. Sometimes they also need only one or two of a type of machine, and a toolbuilder may not want to rejigger his plant to meet an order for one particular tool.

But for all this special situation they're in, the aircraft builders' research points clearly to one conclusion: The tools that they're developing today for working titanium or molybdenum can be used just as well to work less exotic metals. The harder tools needed to form titanium will work longer on other metals—and do a more precise job.

- **New Techniques**—In use in the aircraft industry now are some radically different metal forming techniques. One is resistance heating: A high electric current is shot through the piece of metal being worked; the current brings the metal to a high temperature for an instant—not long enough to affect the stability of exotic metals like titanium—while the forming tool stamps it. Radiation heating sets out to do a similar job: A "cuckoo lamp" with a filament that heats up to 6,000°F in less than a minute emerges from a box, heats the workpiece, then ducks back just in time to avoid destruction by the drophammer, as it smacks down on the hot metal in the die.

Lockheed Aircraft Corp. is pushing hard the development of another wholly new technique—explosion forming of metal, the use of gunpowder cartridges to shape metals so fast they don't have time to break under the impact of the explosion.

Many others in the industry are testing new metal cutting methods. They've made strides lately in chemical milling—shaping a block of metal by first masking the parts that have to be preserved, then dumping the block into an etching bath that eats away the unwanted areas. Now they're trying electro-erosion—cutting a block of metal into the required shape by bombarding unwanted chunks out of it with an electric spark instead of with a tough cutting tool.

- **Chance for a Fortune**—Through most of the aircraft industry there's a sense of impatience with machine tool mak-

ers. The aircraft makers complain that toolmakers are too slow, too conservative, too often unable to deliver the kind of machines needed in the aircraft plants. Some aircraft companies do have close agreements for research and development with machine tool makers, but most do their own R&D these days. Says one aircraft tooling researcher: "I wouldn't be surprised if an aircraft firm came up with a couple of revolutionary new metal cutting tools and made a fortune licensing the discovery while the conservative toolmakers rot in their shoes. . . . Where technology moves fast, customers won't wait for suppliers, they'll do it themselves."

But the toolmakers are moving. Government and private research a few years ago developed tape-controlled machine tools—tools whose speed and movements are guided by electronic and hydraulic controls, which are, in turn, guided by digital instructions recorded on paper or magnetic tapes and fed into simple computer systems. Now the toolmakers are turning out this equipment.

IV. Controls for the Future

There's closer cooperation between users and suppliers in the second broad area of technology that is developing fast these days—in automatic instrumentation and control systems. Many of these systems are the products of close joint research by chemical or oil companies and instrument makers.

- **What's Here**—These products have advanced a long way already. Last year, for example, one large refinery spent \$50-million modernizing its plants. First in the chain of instruments installed in those plants are sets of on-stream continuous analyzers. These reach into the process stream and feed back to a central control room information on the octane rating, the composition, and even the color of oil products flowing through the lines.

Before these instruments were installed, workers at the refinery six times a day tapped the flow, took back samples to laboratories to have them analyzed, and then switched valves to make changes in the product mix, if that were necessary to keep production up to standard. Each check took between 30



"Why don't you talk to the people at Chase Manhattan?"

Leading businessmen all across the country who are planning now for future expansion are finding that a timely talk with Chase Manhattan can be an enormous help. Close contact with our well-informed business consultants assists in financial planning now for growth and profit in the years ahead. Whatever your business, a talk with the people at Chase Manhattan can prove extremely worth while. Write us at 18 Pine Street, New York, or telephone HAnover 2-6000.

The Chase Manhattan Bank

Member Federal Deposit Insurance Corporation

MEMO

FROM:

TO:

PLAN 59

minutes and two hours. And since the refinery ran at 1,000 bbl. an hour, there was a wide gap for error.

• **What's Coming**—Today's continuous analyzers keep a constant watch on quality—though it still requires a human operator to act on the information they gather. Tomorrow's analyzers will do even more. They will be linked with electronic computers, which, pre-fed with data on product quality and the refinery's most profitable product mix, will themselves actuate the hundreds of different valves in the plant.

The first of these closed-loop computer-controlled plants will go into operation this year. Among the earliest will be a polymerization plant at Texas Co.'s Port Arthur (Tex.) refinery, and a pilot plant for Esso Research that's now being fitted with its instruments by Consolidated Electrodynamics (BW—Feb. 8 '58, p. 54).

Already, other industries are beginning to borrow the techniques and adapt the instruments. Utilities, traditionally conservative in trying new control techniques, have begun using electronic data loggers, produced by Ramo-Wooldridge—equipment similar to that in systems that keep watch over a Socony Mobil refinery or a du Pont chemical plant.

V. Pressure of New Ideas

In this way modernization pushes through a whole range of industries: Research provides new techniques for one industry and competition forces their adaptation by other industries.

Already the penalties are severe for companies that lag behind. Near Houston, an 18,000-bbl.-a-day refinery was closed a couple of years ago by its management because its production costs were too high. Today, say local refinery men, the plant is "good only for junk." Technology has moved so far ahead in the last two years that it would be cheaper now to build a completely new refinery than to try to adapt and restart the old plant.

Says one businessman who is in the vanguard of the technological race today, Celanese Corp.'s Vice-Pres. Alexander R. Cochran: "You can be sure of one thing in this industry—if you stand still for two minutes, somebody's racing ahead of you." Increasingly, this will be the pattern for U.S. businessmen as the broad range of industry follows along behind the technological leaders.

Chrysler's Airtemp Controls



the

"Secret Costs"

of

Air Conditioning

Planning to air condition? Purchase price is only part of the cost story. Actual cost is determined by *long-term* expenses and *long-term* savings.

So before you choose your air conditioning, look into the Airtemp cost story. Year after year, Airtemp saves you money by controlling these 3 "secret costs" of air conditioning.

THE SECRET COST OF WRONG EQUIPMENT

The wrong equipment can be troublesome as well as costly to operate. Airtemp makes all kinds of air conditioning—over 297 models—and can advise which type is best for your needs. If you wish, our Airtemp Construction Division will recommend a qualified engineer and contractor near you and work with them. *You're sure to get exactly the right equipment from Airtemp!*

THE SECRET COST OF OPERATION

Operating costs over a few years may actually exceed the first cost of air conditioning. But rock-bottom operating costs can save you substan-

tial sums. That's why you should know that Airtemp—thanks to Chrysler engineering—*promises the lowest operating costs in the industry!*

THE SECRET COST OF MAINTENANCE

Maintenance costs and repair costs can be a shock. A breakdown brings repair bills plus the cost of lost time, lost business. But Airtemp air conditioning is carefully engineered by Chrysler for trouble-proof operation. And Airtemp is installed only by qualified contractors, who must certify to Airtemp that equipment warranted for 5 years has been installed properly. *That's why Airtemp maintenance costs average out to be the lowest in the industry!*

May we give you the complete facts—including data about Airtemp's new lease-purchase plan that saves you money on taxes, conserves working capital. For prompt action mail the coupon below, or see the Yellow Pages for the name of your nearby contractor or dealer.

C H R Y S L E R

Airtemp

AIRTEMP DIVISION, CHRYSLER CORPORATION
Dept. BW-9-58, Dayton 1, Ohio

We would like the full facts on how Airtemp controls the 3 "secret costs" of air conditioning.

Name

Address

City Zone State

Firm Name

MEMO

FROM: Vice-President—
Production

TO: President

Here's what some other
companies are doing
about modernization:
A big one (U.S. Steel),
a small one (De Laval),
and one in distribution
(Diana Stores).

Mulligan Mfg. Co.

What U.S. Steel

A steel mill is something far too vast and expensive to junk whenever a producer feels like improving itself. Basically, that's why, ever since World War II, modernization of existing plant has been a way of life for the world's largest steelmaker, United States Steel Corp.

The steel industry emerged from the war with its facilities bedraggled. For five years the emphasis had all been on production; for a decade before that, operations had been at pitifully low levels. As a result, the industry was 15 years behind in experimentation, in refinement of practice, in modernization.

Before it could expand capacity, it had to maintain the capacity it already had—and to replace what was obsolete.

These tasks had to come first even with the postwar economy demanding more and more steel. The solution was to expand at the same time it was modernizing—in large measure, by wringing huge gains in productivity out of existing facilities.

• **Billions Spent**—U. S. Steel, with so many producing shops in so many locations, had the biggest modernization job of all. In the last dozen years, it has spent slightly more than \$3.5-billion on plant and equipment—a figure almost 2½ times bigger than its net assets in 1946. Today, it has another "more than \$1-billion" in authorized spending on the books.

Much of this continuous, heavy



Gets for the Billions It Spends

spending has been for wholly new plant, such as the Fairless Works and the Orinoco ore mining project. But a staggering portion—there's simply no way to tell exactly how much—has gone and will go for modernization of old plant. This flood of modernization dollars brought Big Steel progress such as this between 1946 and 1957:

A 39.7% increase in ingot capacity, 99% of it in open-hearth facilities, with 14 fewer open-hearth furnaces producing an additional 11.3-million tons of ingots. Of the Corporation's 256 open hearths, a scant dozen have been built since 1946; 70% of the added capacity is attributed to modernization.

A 25% boost in iron smelting capac-

ity with only four more blast furnaces added to the 79 operating at the Corporation's plants in 1946. The three factors chiefly responsible are beneficiation, both of iron-bearing materials and of coal for coke, improvement of facilities, and better operating practices.

• **Steady Renewal**—The razzle-dazzle of publicity has focused more on modernization in the steel finishing departments, where, for example, piece-by-piece handling of 15-lb. sheets has been replaced by continuous tinning, galvanizing, annealing, pickling, and cleaning of, say, 15-ton coils. But as the increases in capacity attest, some of the most impressive results have come in the iron and steelmaking departments. There, U.S. Steel has sought to get the most work possible out of every blast and open-hearth furnace.

• **Push for Size**—For instance, blast furnaces with small or medium hearth diameters are enlarged as much as practicable whenever they come due for relining. In other cases, small furnaces—generally quite old—are completely replaced with larger models. At Gary, between 1948 and 1957, three of 12 furnaces were rebuilt with larger hearths and a fourth was supplanted.

Big Steel is also retiring the blowing engines that for generations have delivered hot blasts into the furnaces. Turbine-driven compressors are much thriftier to operate than the traditional compressors run by reciprocating steam or gas engines. In 1948, U.S. Steel listed 135 blowing engines. By 1957, the number had been reduced to 92, and turbines are due to replace still more.

New technology has brought other changes to the blast furnace. High-pressure tops that seal gas pressure into the furnace improve metallurgical reaction there. Automatic controls move raw materials from stockhouse to furnace faster. Automatic stove reversing equipment helps keep at even temperature the blasts of air fed into furnaces, boosts quality and quantity. The biggest improvement of all has been the use of beneficiated raw materials.

• **Upgraded Open-Hearths**—In the steel departments, modernization has been faster. Open-hearth furnaces are smaller and cheaper than blast furnaces. They are rebuilt much more frequently.

Because space is critical in many open-hearth shops, it's often more economical to hike capacity of existing furnaces, without changing their over-all dimensions, than to replace two small furnaces with one big one. The favorite course is to add square feet of hearth area. But if the structure is to be no longer or wider, this means less space at each end of the hearth for air up-

takes and gas downtakes. In order to cram the drafts into the smaller space, steelmakers had to learn how to improve combustion, how to withdraw more gas through smaller vents, how to pressurize furnaces to cut heat loss. They turned to devices such as better burner nozzles, more efficient fans, and larger doors and charging boxes. Better scrap preparation, faster charging machines, and better instrumentation and controls also helped.

U. S. Steel's open-hearth program calls for adapting existing furnaces to the biggest possible heats—or batches—of steel. In 1947, almost half its open-hearths (146) were of 125 tons capacity or less. Nine years later, only 44 open-hearths that small were still around; three of these are primarily foundry units and four others have since been dismantled. Over the next five years, the Corporation predicts, only a few shops will be tapping open-hearth heats smaller than 175 tons, and the biggest will be substantially bigger than today's giants.

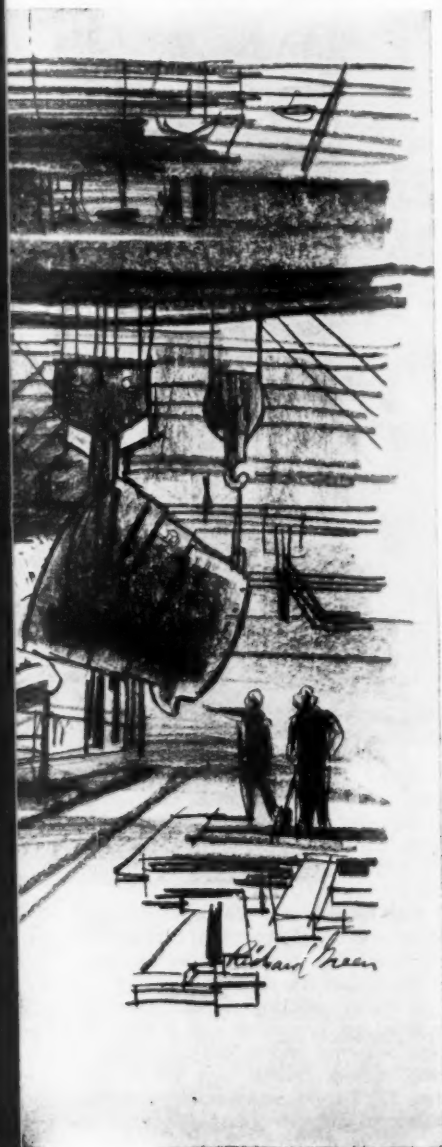
• **Range of Sizes**—Still, this is not to say that every small open-hearth and blast furnace will disappear from U.S. Steel premises. Making and selling steel at a profit is far too complex for any such meat-ax approach.

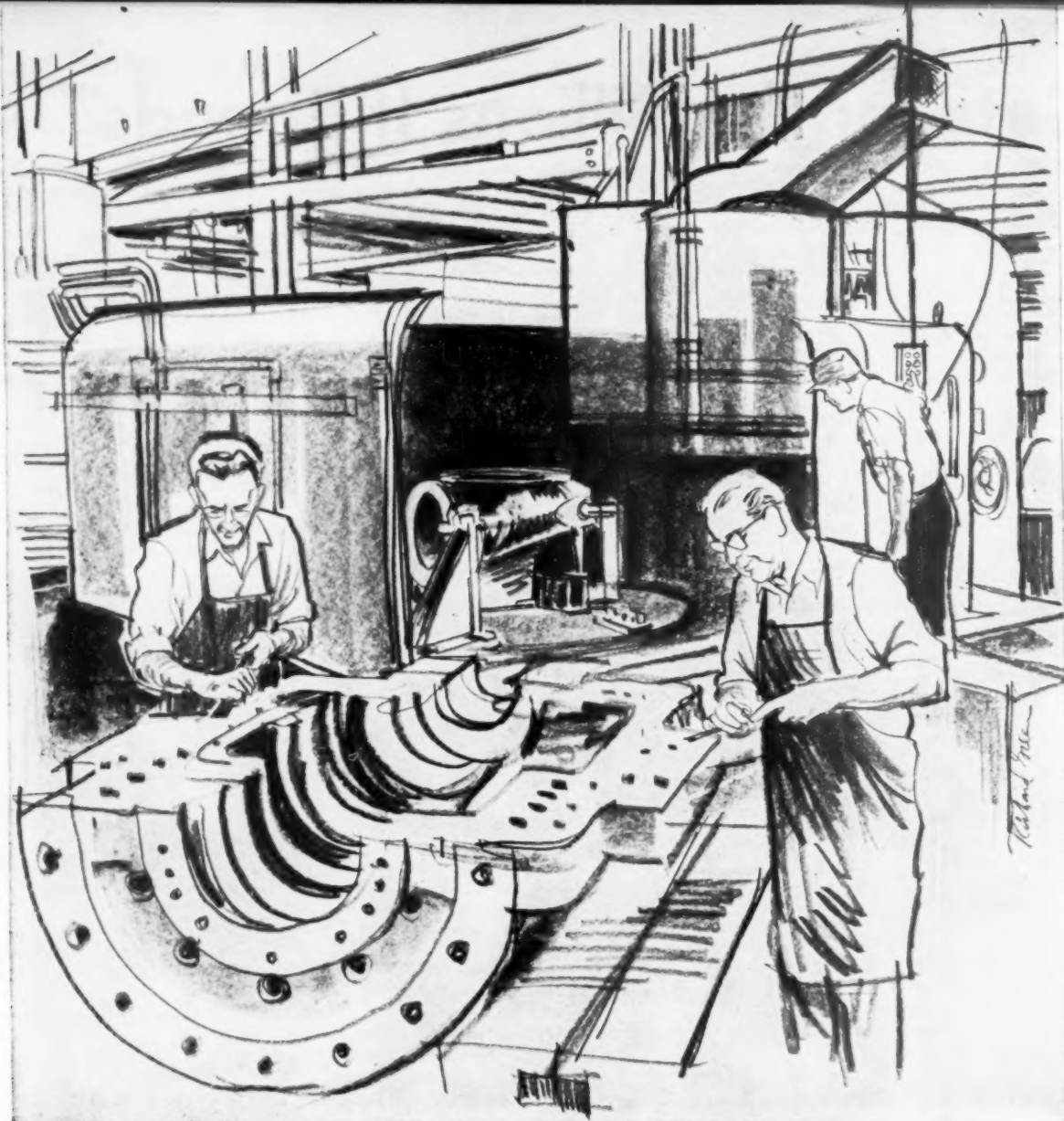
So, to keep its flexibility, Big Steel is sure to retain some of its smaller open-hearths at plants that live off a series of small orders for specialty products.

Within such modest limitations, modernizing goes on all over U.S. Steel. It can be as dramatic as the three new electronic punch-card-controlled rolling mills being installed now at Gary, South Chicago, and Duquesne—or as prosaic as replacing tool steel with carbide for tools in the machine shops.

• **Payoff**—Does modernization pay off for Big Steel? From one viewpoint, it's possible to figure that perhaps it hasn't, at least not so much as for others in the industry. For U. S. Steel's 39.7% expansion of ingot capacity was below the industry average of 53.1%.

But, almost by definition, modernization is inspired at least as much by a desire to cut costs and boost efficiency as by a desire to expand. On this score, the Corporation's modernization has paid off spectacularly. When its program started—and for some years thereafter—it consistently earned less per sales dollar than the industry as a whole. In recent years, however, it has been earning more than the industry average. And today there's reason to believe that U.S. Steel has achieved one of its basic goals—to be the industry's low-cost producer (BW—May 3 '58, p.34).





De Laval modernizes with a vertical grinder (background), a machine that does the painstaking work of 17 men.

It's a War on Costs for De Laval

For a company like De Laval Steam Turbine there's no choice but to run a trim, productive, tightly organized operation.

De Laval makes steam turbines and ship propulsion systems—and meets the massive competition of General Electric and Westinghouse. It makes blowers for steel furnaces and pumps for utilities—and meets the intense competition of Worthington and Allis-Chalmers. And in a line of other power conversion and transmission products it runs against dozens about its own size (De Laval's 1957 sales: \$28-million).

"In some lines," says a De Laval vice-president, with a grin, "it's a case of

General Electric and Westinghouse splitting the market 60% and 40%—and we get what's left."

• **Score of Success**—For all the relentless competition it has to face, De Laval does well. It's building the turbine and gears for the Savannah, the first nuclear powered merchant ship (BW—Sep. 6 '58, p140). It recently landed a \$4.5-million contract for a nuclear submarine power unit. Turbines now nearing completion in its shops at Trenton, N. J., will go into several supertankers to be launched next year.

De Laval doesn't get opportunities like these by the dozens. It isn't easy for a company of its size to raise money

or spend what's necessary in order to seize some of the chances that come its way. Its research must stick close to fields that bring it the most direct benefits and fit its production equipment and established markets.

• **Plan for Renewal**—Yet it has to capitalize on every chance. And that is why De Laval has just drawn up its own five-year plan for modernization.

It started working on this plan 18 months ago, beginning with a study of its accounting and record-keeping systems. Closer control over these now gives De Laval's management a better chance to judge the earning power of its various products, its departments,

*Stacking up profits
is easier...
when you use
Ameripol
Rubber*



Before: Ordinary bags have to be unloaded from truck or rail car one by one—takes extra time and manpower, increases costs.



After: Ameripol comes in bags with vertical-release glue to permit easy, safe stacking, economical lift truck handling.

PROFITS go up, handling costs go down when your plant gets Ameripol rubber in bags that can be safely pallet-loaded. As many as 28 bales of rubber may be loaded on a single pallet. Yet when it's time to unload, each bale can be lifted off without damage to the bags.

Improving packaging to cut handling costs is part of the Goodrich-Gulf program to make rubber processing easier

and less costly. It includes new product developments to cut your costs. It includes addition of new manufacturing facilities to put vast supplies of raw rubber nearer to you. These are all reasons Ameripol has become—the preferred rubber...examples of how your company can profit when you buy from Goodrich-Gulf Chemicals, Inc., 3121 Euclid Avenue, Cleveland 15, Ohio.



Goodrich-Gulf Chemicals, Inc.



Why a truck earns more when it's "Built like a Mack"



Construction men often tell us that "as the trucks go...so goes the job." They know their expensive cranes, pavers or shovels earn far more when trucks run on schedule and materials arrive on the dot. And they say that Macks,

above any other truck, provide the power, speed, traction and dependability that keep all their other equipment hustling for months on end. "Built like a Mack" means more profits to construction men... as it does to any truck owner!

...with Mack-built engines

If you want it done right—do it yourself! That's why Mack builds and exhaustively tests its own engines, transmissions, differentials, cabs, suspensions and axles. In fact, Mack controls its quality by building more of its major components than any other automotive maker. And all Mack components work in vibration-free, life-prolonging harmony with each other.

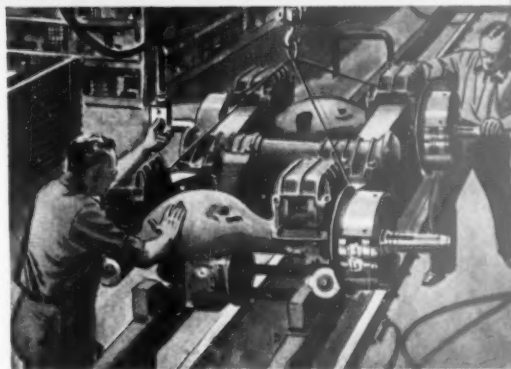


... with Mack-built transmissions

Mack transmissions — like this 20-speed unit — run far longer, need less attention than any others, thanks to famous Mack metallurgy, precision manufacture, and exclusive Tetrapoid® gear design in which maximum strength, durability and quiet running are maintained in optimum balance.

Ask a Mack user soon. See why so many successful contractors and haulers say that two Macks can often outwork and outearn three or more competitive units on demanding jobs.

It's part of the language ... Built like a



... with Mack-built rear ends

Here's why Macks take the toughest jobs in stride. Macks work where other trucks bog down, thanks to exclusive features like the Balanced Bogie with Power Divider—our four-wheel, rear-axle drive that distributes engine power equally to the wheels having traction.

THINKING OF A NEW OFFICE? SEE YOUR ASE DEALER

Tired of the years-old surroundings you work in? Longing for a layout like this? Then the man for you to see is the one who handles ASE. He'll gladly help you plan an efficient, attractive office ... be it general, departmental or executive. From his complete, comprehensive ASE line, you can choose the design, styling and finish that's right for you. He's courteous, capable, qualified to help you. That's his business. See him today.



ASE OFFERS A COMPLETE LINE OF
QUALITY OFFICE FURNITURE

DESKS • CHAIRS • L-UNITS • TABLES
CREDENZAS • BOOKCASES • FILES
BLUEPRINT FILES • CABINETS • LOCKERS



ALL-STEEL EQUIPMENT INC. AURORA, ILLINOIS

and even most pieces of its equipment.

Capital goods orders—De Laval's along with other manufacturers'—went into their worst slide in years just as the modernization plan was being completed. But the company didn't scrap or postpone its ideas. Says Pres. James P. Stewart: "We feel we can buy the new tools we need more cheaply now than at any time in the future." De Laval hadn't been skimping on equipment purchases before it set up its new program. It had put from \$750,000 to \$1.2-million into tools and equipment each year for the last five years—investing more than it has been able to write off by depreciation.

So now its depreciation reserves and retained earnings aren't enough. To carry it through at least the first stages of its modernization program it had to arrange last month a commitment from an insurance company for a \$5-million, 54% loan for 15 years.

I. Aid From a Formula

The aim of De Laval's five-year plan is to replace all the company's high-cost production equipment, but naturally it can't do this in one swoop. Part of the plan is to keep going a continuous survey of its machines.

Cost, age, maintenance records, and estimates of productivity of every machine in its shop are filed on punch cards. And each year De Laval makes a much broader analysis of at least 20 of its machines, comparing them with returns that would come from new machines of the same general type. For this, De Laval has made its own modifications of the replacement analysis technique developed by Machinery & Allied Products Institute (page 100).

"Our surveys always show," says Stewart, "that we can justify buying more machines than the company can actually afford. . . . The extra checks show us which machines we really ought to buy out of the funds we do have."

• **Dangerous Age**—For its longer-range estimates, De Laval keeps tabs on the age groupings of its machines. Like many other manufacturers, it acquired a large number of machine tools 15 or 16 years ago, during World War II. It still has a disproportionately high number in this age group.

II. Machines for the Job

Machinery replacement at De Laval is much more than a mere drive to reduce actual labor costs. Direct labor costs make up only about 10% of the company's production costs; materials run to 40%; and so does burden, the costs of tools and plant.

Speed and quality improvement are the company's first two requisites. Since most of the machines it replaces are at

least 10 and nearer to 20 years old, De Laval generally finds that new tools have about double the horsepower of its old ones. And in metal-cutting, horsepower is just about equivalent to productivity. A lathe with a higher horsepower engine does more work in less time, and can hold to closer tolerances than an old machine.

• **The Cost-Cutters**—One new machine in De Laval's shop changes a job that used to take days into one that can be measured in minutes. The new machine is a planer-miller (below). It shaves to the proper shape chunks of forged metal that are to be turbine casings. A standard planer may take days to do the job, depending on the size of the turbine. The new machine, in one pass, shaves a 12-in. wide swath from the turbine casing. De Laval doesn't try to estimate how many old planers the new machine replaces. But it does know that you pay heavily for this kind of performance—a large planer-miller costs \$250,000.

Another new tool is a vertical grinder. It smooths the two matching sides of a turbine casing so that the two parts fit together as a steam-tight joint without any gasket. This job used to be done by hand labor.

Without equipment like this, De Laval couldn't hope to compete in the capital goods industry. Without it, and with today's conditions in that industry, the company could be close to death.

III. Pushing Outsiders

But the cost of machines, plant, and direct labor still total only 50% of De Laval's production costs. Four-fifths of

the remainder goes for materials, mostly castings and forgings. De Laval's purchasing director, Richard Sprigle, keeps as close a watch over this side of the business as the engineers do over the production shop and he calls the engineers in to help him.

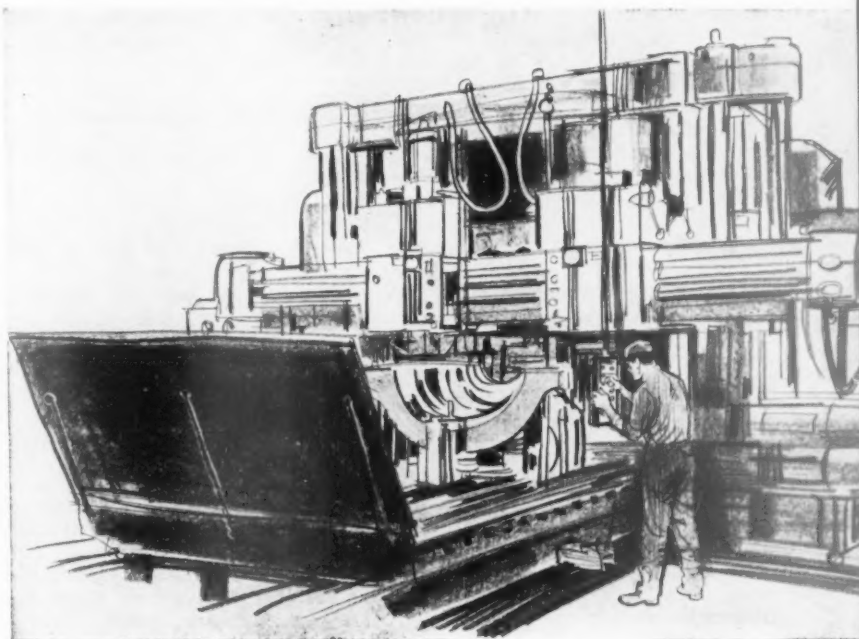
"We make our suppliers tell us where the high costs are in the materials they sell us, then both of us go to work to see if we can't figure out a way to cut those costs. Our own engineers help a vendor solve particular problems he meets in filling our order," says Sprigle. De Laval engineers regularly see inside the plants of the company's suppliers, and they collect and record on punch cards information on the efficiency of those plants.

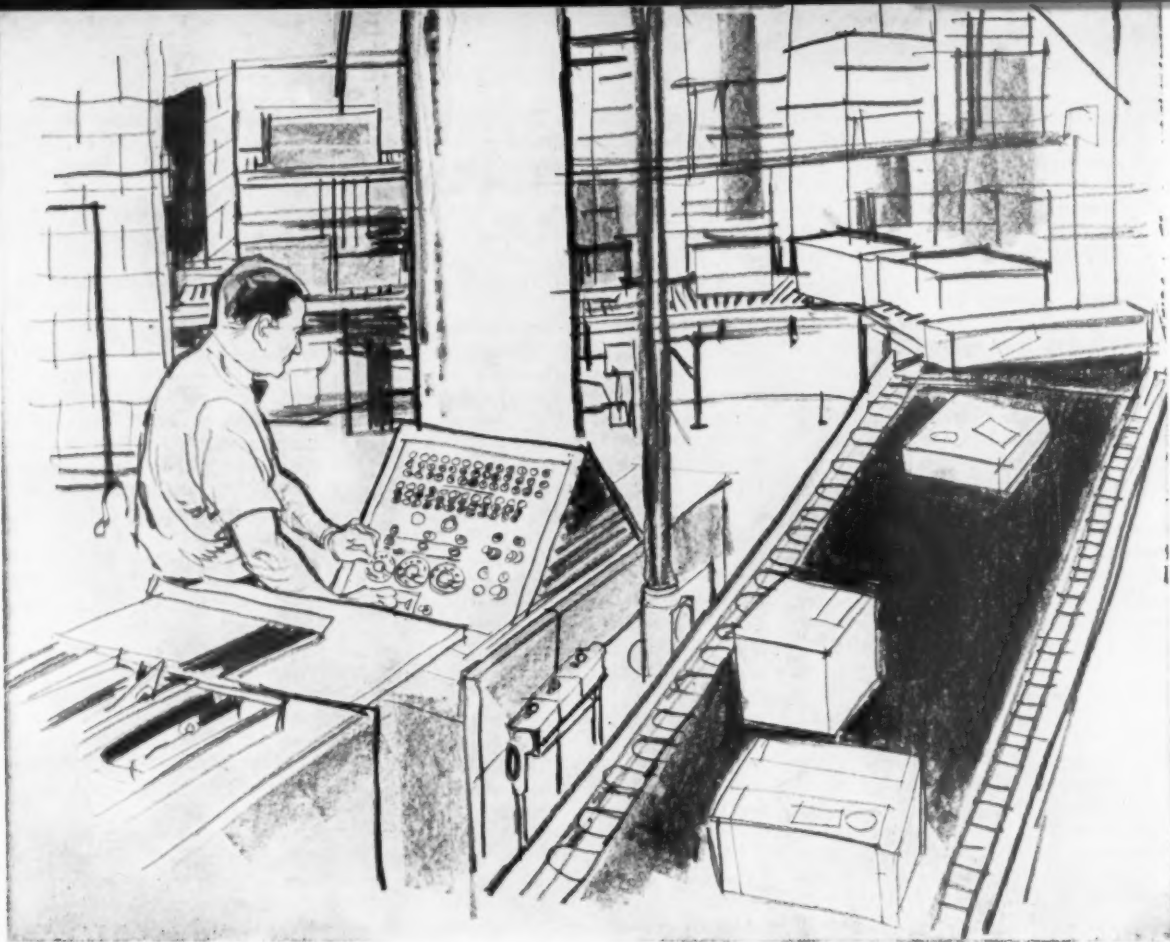
"We'd much rather do business with a modern shop," says Sprigle. "We know from our own experience that a supplier who has modernized can do the job much more cheaply and with better quality."

"It pushes modernization right on down the line."

• **Route Ahead**—Planning for growth in a company like De Laval calls for a constant watch on all those areas where costs build up.

"We know that whatever else we do to increase our market, we have to cut our costs," says Pres. Stewart. "Over the long run we have found that investing heavily in capital equipment is one of the best ways to do that. There's no magic to modernization, though—you have to keep everything working right all the time. We've put a lot of money into brains and new equipment, and we think that's the only way we can continue to succeed."





Simple computer in Diana Stores' new warehouse takes charge of the chain's incoming and outgoing goods.

Diana Stores Finds Its Answer

By any business standard, Diana Stores Corp. is a pretty small outfit operating in a sector of the economy that doesn't get much notice. It runs some 208 stores, mostly in the Midwest and the South and sells women's and children's clothing (1957 volume: \$36.5-million). It doesn't produce the clothes, merely buys and retails them. Its stores aren't large; they occupy a corner of a suburban shopping center or a piece of a block on Main Street.

But Diana Stores and some of its competitors—whose function is almost entirely distribution—are important to a broad range of U. S. industry because they're in the forefront of an attack on one of industry's growing problems, the climbing cost of distribution.

• **Neglected Field**—Almost all the technological advances of U. S. industry for decades past have been aimed at boosting the productivity of factories. Though new distribution techniques often require only adaptations of machinery already built for production plants, only in the last few years have engineers paid much attention to increasing productivity in distribution.

For companies like Diana, survival depends on grasping at these new techniques. Yet the answers they're finding can apply as well to distributing refrigerators or transistors.

I. The New Operation

Diana grasped at the new techniques by putting up last year on New York's West Side one of the most completely automated warehouses yet built. Through it passes every piece of clothing sold in the chain's 208 stores—and even the paper bags and cardboard boxes, pencils and books of sales slips used in the stores.

The machinery that runs Diana's new warehouse consists chiefly of two sets of fairly simple electronic circuitry; a monorail carrying system controlled by one circuit; and a "ferris wheel" elevator—a series of trays attached to an endless moving chain that reaches up vertically through the warehouse—controlled by the second circuit.

• **Putting Them Together**—Inside you can see that what counts is not the machines themselves, but the concept

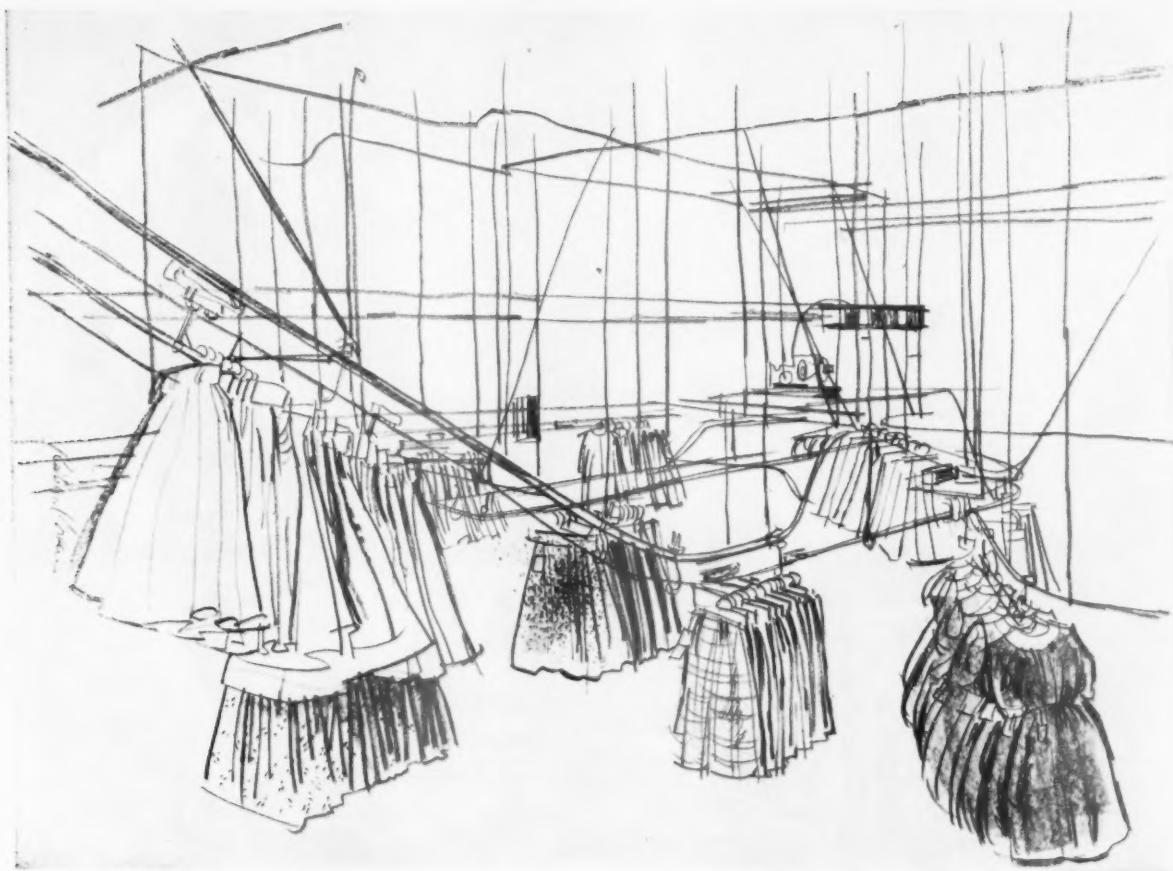
of how they should be used together.

The monorail is a spider-web of struts and tubes. It looks as if it were put together by an ardent do-it-yourselfer. The "ferris wheel" is an adaptation of a standard mechanical hoist. The control panels of the two electronic circuits are not much more elaborate than a calculating machine's.

But together, these are sufficient to produce a new kind of warehouse. There are no scurrying pushcart handlers, no creaky freight elevators groaning from floor to floor, no sign of hurried activity at peak periods.

• **Job for Diana**—This is what has to be done in the warehouse:

The goods arrive from manufacturers and have to be counted (a job for hand work). A clerk at the receiving dock heads them toward one of three floors by dialing the number of packages (or batches of goods on hangers) on one of three dials on the control panel in front of him. The monorail and the "ferris wheel" respond by picking up the proper number of packages and hoisting them to the proper floor. There, they are price ticketed and di-



Monorail system, a spider-web of metal struts, shifts garments from floor to floor, cuts warehousing costs.

in a Technique for Distribution

vided into lots for each store in Diana's chain. (These, too, are hand jobs.) Then the electronically controlled system takes over again to seal packages and shift them out to waiting trucks.

Since the monorail and "ferris wheel" are continuous running systems, goods no longer have to move in stop-and-start fashion in elevators. On the average, a full day is cut from the time each item spends in the warehouse. And that cuts immediately from floor space, insurance, and inventory.

• **Direct Gains**—The continuous movement of the system levels out the peaks of each day's activity. And that cuts at payroll costs and at the less calculable cost of errors, which build up quickly in rush periods. It also cuts overtime—by an estimated \$50,000 a year.

II. Only Way to Grow

But these and other direct savings are only part of what Diana Stores' Pres. Samuel May sought when he decided to build the new warehouse. This step is only part of a plan for growth.

Today, Diana's warehouse is running

at 50% of capacity. This is about what May intended it would—at this time. For he plans to double the number of stores in his chain in the next 10 years. And May, an accountant, estimates the new warehouse will be able to meet the needs of a 400-store chain without any addition to the warehouse's payroll.

Operating costs in Diana's old warehouse ran to some 7½% of the company's sales. Today, with the plant running at half its capacity, those costs are down to 6½%. Within 10 years May estimates they will be down to 5%—as he expands the chain and brings warehouse operations up to capacity.

• **No Alternative**—Competition in Diana's sector of the retail industry is intense. The 1½% reduction in part of his costs could, May says, mean the difference between growth and strangulation for a company in his line.

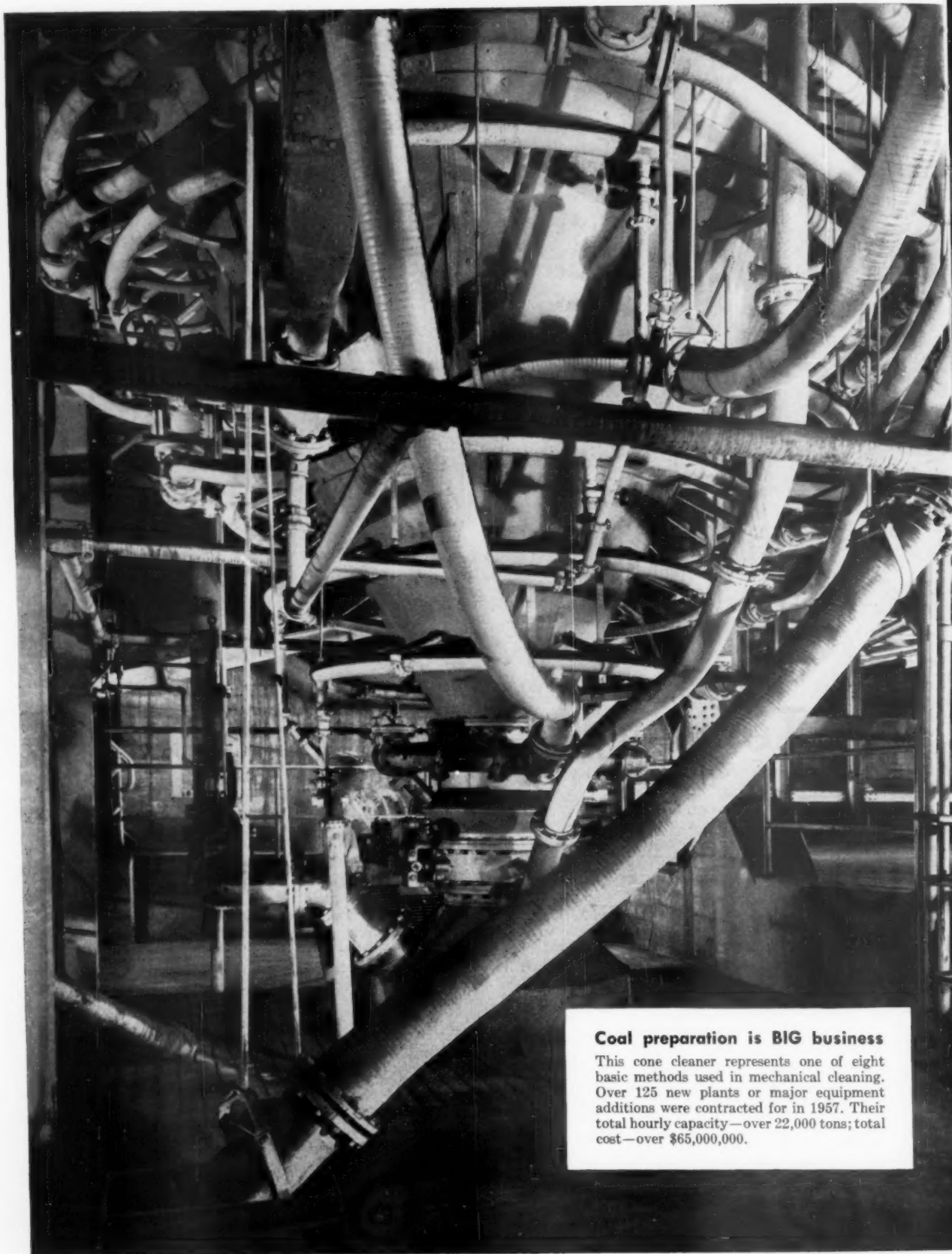
The competition isn't lagging today. In fact, it was a modernization move by one of Diana's competitors that helped set the company on its present course. Diana's executives heard of that move, called in Dasol Corp., engineers of the warehouse systems, and sought

an estimate for modernization. Dasol's ideas were rejected at first. The proposed system cut at the authority of Diana's vice-presidents. Then May brought his accountant's viewpoint to it—and pushed the job through.

• **Not the Ultimate**—Diana's warehouse doesn't contain all the new equipment that could be built into an automated operation. The jobs of at least a dozen men could be mechanized. But machinery for these tasks—grading clothes by sizes and colors, folding and packing them into shipping boxes—comes only at high prices. And since each of these machines would replace only one or two men, full mechanization isn't economic.

May paid out \$400,000 for the equipment in his warehouse. Land and construction ran to about \$3-million. The money came out of Diana's working capital. But May has since negotiated a \$4-million line of credit. He is using this to finance his growth program.

"The new machinery will pay for itself in four to five years," says May. "But that doesn't mean so much to us as the fact that we can now grow."



Coal preparation is BIG business

This cone cleaner represents one of eight basic methods used in mechanical cleaning. Over 125 new plants or major equipment additions were contracted for in 1957. Their total hourly capacity—over 22,000 tons; total cost—over \$65,000,000.



MINING IS BIG

and automation paces its expansion

Today, mining is on the threshold of a vast expansion period. Big as it already is, the industry *must* drive ahead to keep up with the coming decade's demands for coal, metals and minerals. Take bituminous coal as an example. By 1970, bituminous mines will:

- double today's tonnage . . . to 900 million tons annually.
- spend \$2 billion on new mines and plants, \$2 billion more on modernization and replacement equipment, and another \$10 billion for operating supplies, machinery parts, etc.
- boost output per man by 100% and more.

The key to mining's expansion plans is automation—using more and better mechanical equipment to cut the cost per ton mined and meet changing market requirements. Look at prepared coal, for instance. Increasing customer demand for a uniform, high-quality product has boosted mechanical cleaning from 38.5% of the bituminous output in 1950 to 59.2% in 1957 . . . a total of 290 million tons. When a new mine is built today, its coal preparation facilities will feature automatic operation with pushbutton control, cost as much as \$3-4 million.

Much the same thing holds true in metallic and nonmetallic mining. New technical and

scientific developments in the past 10 years have brought about tremendous processing advances, made extraction from lower-grade ores commercially acceptable. Result: a growing demand for new chemicals and reagents, processing equipment, and engineering services and construction.

Yes, mining's future is BIG . . . and based on increased efficiency. It's a growth market, a chance for companies seeking profitable new sales opportunities. If your products do any of the following, or contribute to their accomplishment, by all means act now: handle or move ores, coal or other minerals underground or above ground; process, clean, concentrate, refine, or smelt; automate, or save labor on handling and processing.

For fuller information on how your company can meet the challenge of profitable new sales opportunities in mining, write to:

Director of Market Research
McGraw-Hill Mining Publications
330 West 42nd Street, New York 36, N.Y.

on your company letterhead. The latest market and media data files on either coal mining or metallic and nonmetallic mining are yours for the asking, or a representative will call at your request.

COAL AGE



ENGINEERING AND MINING JOURNAL

Serving the Mining Industries

McGraw-Hill Publications, 330 West 42nd Street, New York 36, N. Y.

MEMO

FROM: President

TO: Controller
Vice-President-
Production

Before we get too
deep into our plans,
how can we get
answers to questions
like these?

Mulligan Mfg. Co.

How long will our equipment last? How fast will it deteriorate? How fast will technological changes obsolete it? What could we get for it if we junked it now?

How long will the new machinery last? When will it be obsolete? And what will its salvage value be then?

Are we running our equipment at its most efficient rate? How many hours a year will we operate new equipment?

Will the new equipment do just the same job?

Or will it boost quality as well as quantity? And if it does boost quality, how much will that be worth to us? Could we jack up prices, or won't the customers know or care about an improvement?

What changes would the new machinery's greater productivity bring? Will it change the flow of material? The tools? The floor space? Our inventories? The subcontracting we have to do?

How much will income taxes take of the profits we'll get out of new machinery? How can we figure depreciation to our best advantage?

What will we have to pay for capital? If we finance out of depreciation reserves or retained earnings, how much will that really cost us? Could we get more if we spent the money on research & development, or advertising, or buying another company, or getting into a new line?

How far ahead should we look before we decide about all this? After all, the returns lie out in the future. What could inflation do to all our calculations?

How to Find the Moment When

"There are two ways to go broke running a business," says Cloud Wampler, of Carrier Corp. "One way is to spend too much, the other is to spend too little."

Finding the line in between is management's never-ending duty. For if a company spends too much on plant it can be loaded with excess capacity that eats up profits. If it spends too little, creeping obsolescence and rising production costs will do the same thing, and its more alert competitors can dig its grave.

Yet making investment decisions for replacement or modernization is, in the words of Pres. Charles W. Stewart of Machinery & Allied Products Institute, "the most backward management area today." It is, he says, "the most backward because it's the most difficult."

And it is the most difficult because a welter of questions faces any businessman who tries to set up a rational policy for keeping his plant and his company's money producing at their best rates. Each question affects the next, yet all are affected by broader developments that he can't hope to control.

• **Present Pressure**—The problem hasn't always been so pressing. In the lush days of the 1955-1957 capital goods

boom and in many earlier postwar years, industry's investment in new plant and equipment was prompted chiefly by a heavy flow of orders. Companies couldn't handle the demand without adding to their capacity.

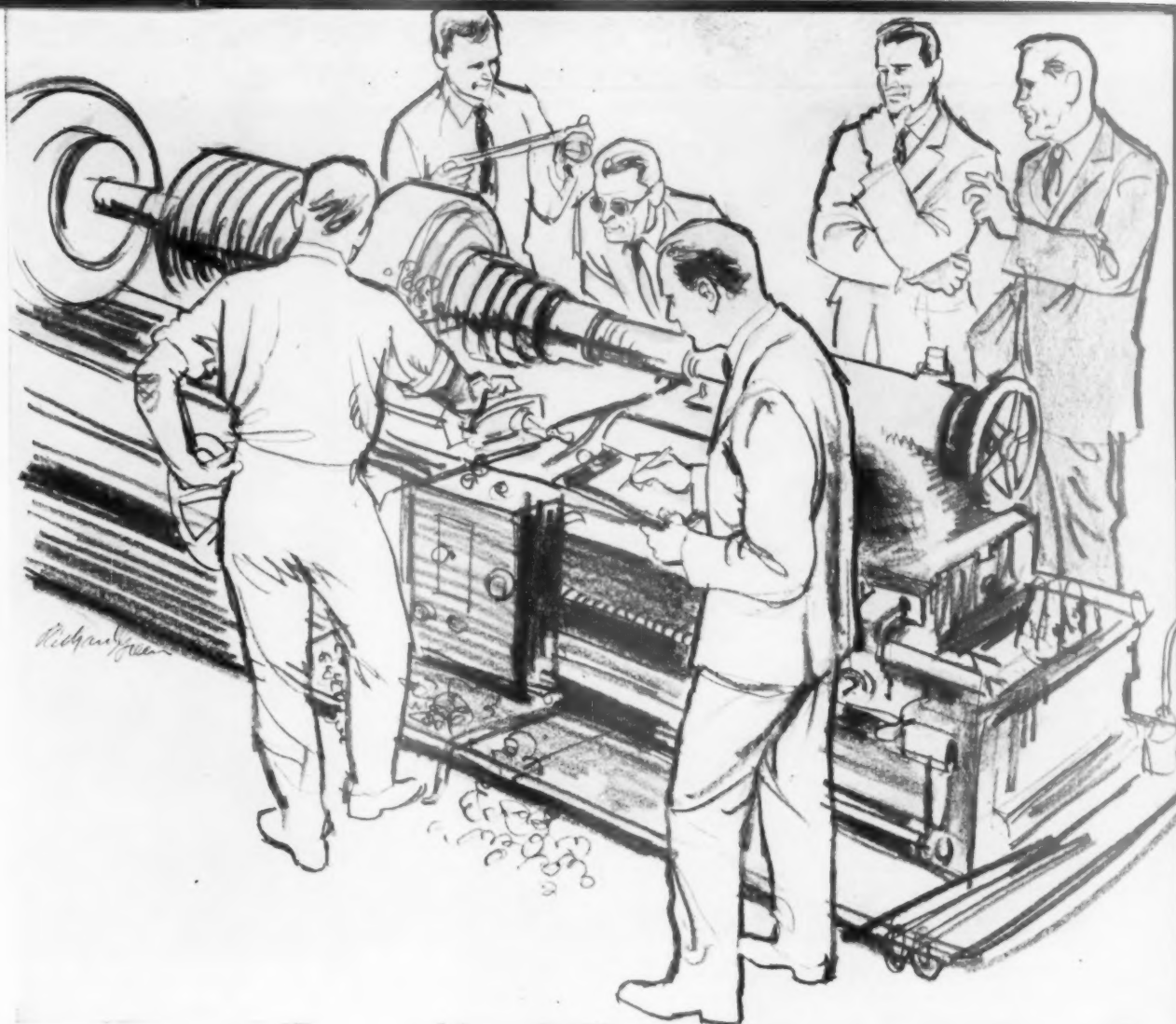
Today, though, many companies have enough capacity to meet the increases in sales that they expect in the near future. The fundamental problem has changed: They must decide whether to replace their existing equipment without significantly expanding their capacity.

So the questions that managements must try to answer when they want to decide whether to modernize their plants become even more complex.

Flying Blind

The welter of questions has scared off many managements in the past. And many still base their decisions on technical necessity, or hunch, or some rule of thumb.

Some meet the problem with the Neanderthal approach. A 30-year-old machine in the company's plant refuses to turn over one day. The machine shop boss walks in, kicks it, and bits of the machine fall all over the



Modernizing Pays Best

floor. He says, "Get rid of that piece of junk." And he buys a new machine. That's all he knows about why he replaced the machine, and whether it was sensible to do it.

For a few years, at least, his company probably paid out more to operate and maintain that machine than the machine itself brought in from its production.

• **Hunches & Politics**—Usually though, management's replacement decisions are a bit more refined than this cave-man approach. They'll often have in them a high degree of hunch or judgment. You can't rule out the importance of these two factors in business decisions, especially where guesses about the unknowable future, or the strategy of competitors, are involved.

It is, in fact, the essence of management to make decisions that cannot be figured out by a formula. At best, a formula will narrow down the number of possibilities and risks in a business decision. But it's still up to management to select the risk that fits best with a company's objectives. And these objectives are factors that can't be programed into a computer—hunch and judgment are still vital. But unless they're backed by rational analysis, they can land a company in deep trouble.

Business' rule of thumb approaches, still the basis for investment decisions in hundreds of manufacturing companies, do call for some facts and figures. But the answers they provide can easily turn out to be meaningless.

I. First Refinement

One of these approaches sets out to establish the "pay-out period." Its great lure is its apparent simplicity and conservatism. It tells—or would tell if it were properly computed, which it usually isn't—how fast a company can get its money back out of an investment in an asset that's wasting and will one day be junk.

• **Payout System**—Here's how it works: Joe Kelly, head of the Flugelheim Machinery Co., thinks his plant may need a new piece of equipment to replace a 30-year-old automatic screw machine. The new screw machine, which works faster, will cost him \$15,000.

He has analyzed his business and found that the new machine will save him \$5,000 a year, before taxes, in operating costs.

So he reckons the payout period is three years. It

MEMO

FROM:

TO:

PLAN

'59

will be six years if he figures income taxes at a 50% rate. It will be less if he also figures his tax savings from the depreciation allowance on the new machine. And depending on what other factors he tosses in—the money he gets from scrap sale of the old machine, the cost of the money he uses for the new one—he will get other answers.

But if the object of all his figuring is to make sure that his company recovers the original cash outlay as quickly as possible, then any answer he gets will be meaningless.

The important question isn't how fast funds will flow back into the company's treasury. If he doesn't make the investment, then he has already got his funds back without waiting at all. What matters is how much the investment will yield beyond the payout period.

• **Valuable Lesson**—Calculating the payout period and coming up with an answer that indicates an investment in new equipment will pay off rapidly may teach a company one thing. It may show that the company has been operating with such high-cost equipment that returns come in rapidly on whatever it spends for new machinery.

But to go on operating with ancient equipment until the payout period is very short is like beating your head against a wall to see how good it feels when you stop. The longer you beat, the better it feels when you stop—provided you haven't killed yourself in the meantime.

II. Reverse Twist

To escape some of the pitfalls that trap managements who base investment decisions only on calculations of the payout period, some companies try a reverse approach. They seek to base their decisions on the rate of return of a new investment.

Here's how Mr. Kelly of Flugelheim Co. would try, with the aid of this system, to make his decision on whether to buy that new \$15,000 automatic screw machine:

"The new machine will save me about \$5,000 a year in direct labor and maintenance costs. But I have to figure my depreciation allowance on it. On the depreciation basis we're using, I can write it off in 20 years. And to round

it out over the 20 years I'll just knock off a standard \$750 a year for depreciation. That means the return to me is \$4,250 a year.

"I'll still have my income tax to take out of that—say 50%. So if I buy the machine I'll net \$2,125 a year more than if I don't buy it.

"Since it costs me \$15,000, I'll be getting a rate of return of 14%. And that sounds pretty reasonable."

• **The Gaps**—Or is it as reasonable as Mr. Kelly thinks?

It almost certainly isn't. And the reason is that this rate of return system is about as faulty as the payout system. Both suffer from two critical flaws:

• **Neither helps a businessman find the real cost of the capital eaten up by his investment in a new machine.** The capital cost isn't simply the price of the new machine. The businessman should also allow for the money he gets by selling the old machine for junk, and for what he saves by avoiding further maintenance costs on the old equipment. And he can't rely on the Treasury's depreciation tables for a sure guide to the fall in the new machine's value. The decline in its real earning power and the nominal year-by-year write-off of its book value are two quite different things.

• **Neither gives a businessman any means to compare the price he has to pay for a modernization project with the present value of the stream of anticipated earnings from this project—or with the yields from other possible projects, or with the advantages he might gain by delaying his modernization plans for a while.** When a businessman buys a new machine, he is, in a sense, buying an annuity that consists of the income he expects to make from the machine. The investment will be good or bad according to whether the capitalized value of the annuity is greater or less than what he pays for the machine.

But how, then, do you estimate the value of the annuity?

The Scientific Approach

The two men who have done most to find the best way of answering this question—and to help businessmen base investment decisions on more solid



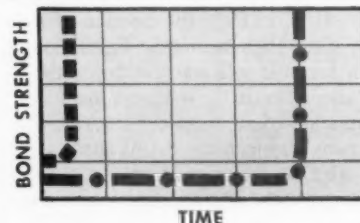
3M Research

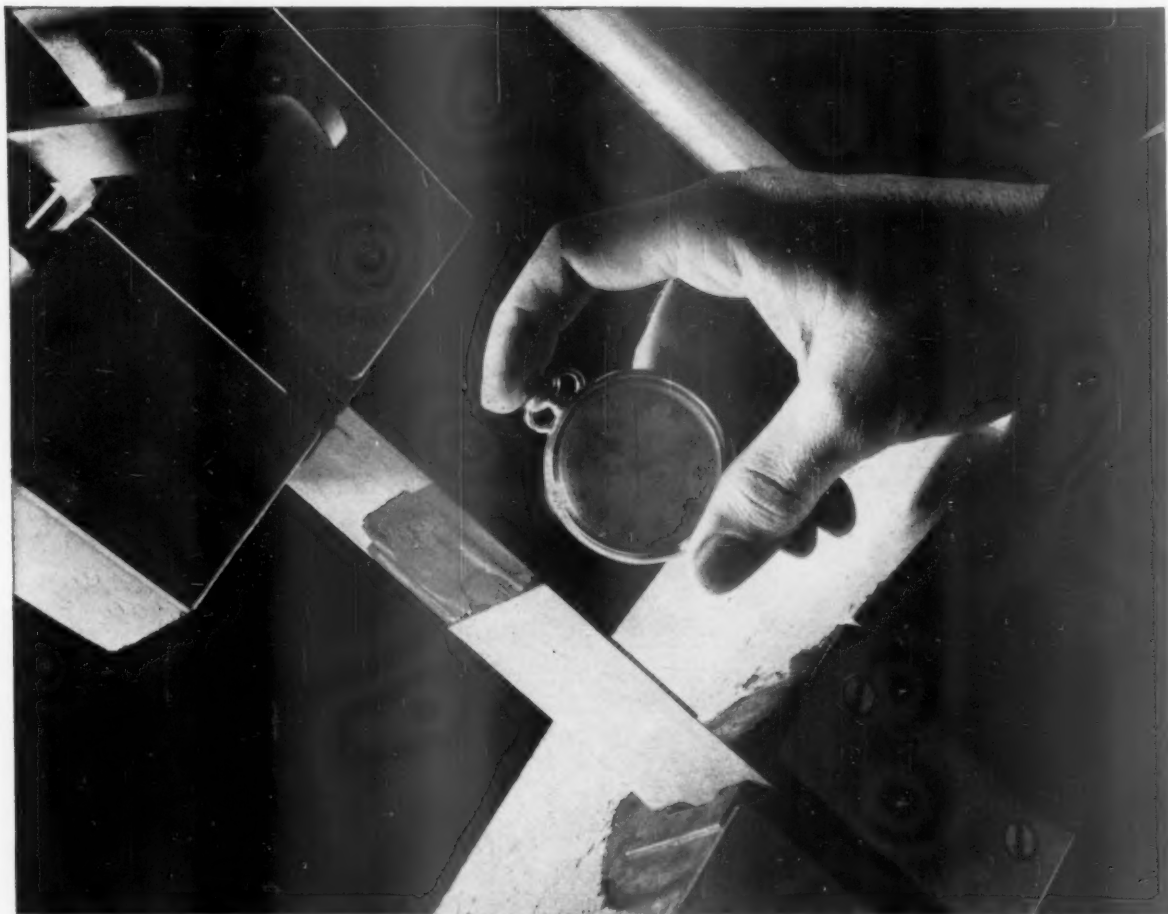
For paper, tile, vinyl . . .

3M technology varies speed

of adhesive strength build-up

QUICK AND DELAYED BREAKS—Range of breaking speed of 3M water-dispersed adhesives is represented symbolically below. Fast bonding of waffle felt to metal requires an immediate adhesive bond-strength build-up (left). Ceramic tile adhesive, however, requires sufficient open time for hand trowelling, then fast build-up (right), once tiles are installed.





TIMING THE BREAK—3M laboratory technicians measure the speed with which water-dispersed adhesives break and begin to build up bond strength. By regulating the break, through proper formulation, they create adhesives suited to highly varied production needs.

gives you the adhesive “break” you need

Ceramic tile, bicycle seats, automobile roof pads . . . they each demand an adhesive “break”—an *instantaneous bond strength build-up*.

But one requires an immediate break, another a delay before break occurs. Here's where 3M adhesive technology pays off.

3M's knowledge of how to control the break of water-dispersed adhesives started with automobile roof pads. Manufacturers needed an adhesive with which waffle felt pads could be bonded to steel in a split second. 3M Research went to work, came up with a water-dispersed adhesive that breaks and gains viscosity the instant pads are inserted. The result—high speed production, and a bond that lasts the life of the automobile.

Today, with water-dispersed ceramic tile adhesive, the problem is reversed. Drawing on technology gained in

many fields, 3M delays break to let tile setters work efficiently.

In industry after industry, 3M has learned more about control of break, through material selection and size of solid particles in the adhesive.

Automobile roof pads, furniture upholstery, plastic sheeting, appliance insulation all are being installed more easily and effectively, thanks to such 3M adhesives with “built-in timing”. Only 3M has such breadth of technical experience, making possible such plus values in adhesives.



SEE WHAT 3M ADHESIVES CAN DO FOR YOU!
For information and free literature, write on your company letterhead to:
3M, Dept. A-9, 417 Piquette Ave.,
Detroit 2, Mich. State your interest.

ADHESIVES, COATINGS AND SEALERS DIVISION

MINNESOTA MINING AND MANUFACTURING COMPANY

... WHERE RESEARCH IS THE KEY TO TOMORROW





Quick heat's no feat... WITH GAS

A FATHER appreciates fast-heating gas... at 2 AM for the baby's bottle... all winter long for his home... and all year long for the ovens and processes in his plant. Last year the gas industry supplied this quick, economical heat to its 30-millionth user and metered an estimated 7 trillion cubic feet of gas. Adding 4000 new customers every business day, the industry serves twice as many users as 25 years ago.

Reflecting gas industry growth, Superior Meter Company has recently opened a second plant equipped with the most modern machines and techniques. The staff has been enlarged, too, by the appointment of highly respected meter design and quality control engineers. Superior, now a subsidiary of Neptune Meter Company, continues to keep pace with the leaders of the gas industry whom it has served since 1912.

NEPTUNE METER COMPANY, 19 West 50th St., New York 20, N. Y.

neptune
for a better measure of profit

DIVISIONS and	PRODUCTS
Neptune Meter Co., Neptune Meters, Ltd.	liquid meters
Revere Corporation of America	aircraft instruments & wire
Superior Meter Co., Inc.	gas meters
Hot Spot Detector Co., Inc.	temperature warning systems
Electronic Signal Co., Inc.	toll collection equipment, electronic scales

MEMO

FROM:

TO:

PLAN 59

grounds—are George Terborgh, research director of Machinery & Allied Products Institute, and Joel Dean, professor of business economics at Columbia University's Graduate School of Business, and also president of his consulting firm, Joel Dean Associates.

• **Can't Do Everything**—Neither claims to have developed an exact science for decision-making, or to have found ways for answering all of a company's questions in this area of investment. Neither claims that his system of analysis can be any better than the facts and estimates that are fed into it. Each agrees that those facts must be determined by the nature of the problem—not, as Dean's associate Winfield Smith says, "by the nature of the logic machine."

But a good logic machine—a good formula—does help management:

• It demands that it be fed with the essential data about productivity, costs, taxes, and so on.

• Working with it, a management can get consistent guides to different investment decisions—the alternatives can be compared because the same kind of data has to be produced about each one.

I. Dean's Systems

Joel Dean's method goes by the name of Discounted Cash Flow. It, too, aims to measure the rate of return of an investment—but in a way that takes into account all those factors that aren't considered by the simpler systems. For Joel Dean, the rate of return means the discounting rate which makes the expected flow of net earnings from new equipment equal to the cost of the new equipment. This rate of return can be compared with other rates from alternative investments—and with a company's costs of capital—as a guide in setting up the company's capital budget.

• **Scheduled Returns**—Finding this measure of a project's worth involves setting up a timetable that shows the effect the project will have on the cash flows of a company during each year of the project's duration.

After the net effect of the project on the flow of cash into the company has been worked out for each year ahead, this stream of receipts is continuously discounted to discover the rate of return of the investment.

The tough and crucial part of the

GAYLORD ACCEPTS YOUR TOUGHEST PACKAGING CHALLENGE

On guard against the profit squeeze? Too much product protection?
Too little? Too many interruptions on automated packaging lines?
Gaylord men can help you check these points — and more.
They have developed a special skill in scoring packaging successes with
corrugated . . . against the toughest challenges.

Whether you need regular cartons by the thousands or
engineered packaging, call your nearby Gaylord man.



GAYLORD
CONTAINER CORPORATION



HEADQUARTERS, ST. LOUIS
PLANTS COAST TO COAST

DIVISION OF **Crown Zellerbach Corporation**



Providence, R.I.



Walter Reynolds, Mayor
Providence, Rhode Island, says—

"An efficient water system ranks high among the many advantages Providence offers industry."

"Since 1935, Transite Pipe has served in the continuing job of keeping our water system more than capable of meeting future needs. In this way our water system not only contributes to the health and convenience of our citizens, but also to the encouragement of industrial and economic growth in our city."

Transite Pipe is reinforced with strong, durable asbestos fibre

Johns-Manville Transite Pipe saves precious water ...protects its purity ...helps keep water costs low

In many ways, an efficient water system is a community's most important investment. It adds to health, comfort and fire safety . . . saves tax dollars . . . attracts new industry.

To make water systems better investments, engineers and water-works officials across the nation use Transite® Pressure Pipe. Clean and rust-free, Transite Pipe safeguards water purity from the treatment plant to your home. Nonmetallic and corrosion-resistant, Transite Pipe stays smooth inside to carry water at peak volume.

And to conserve precious water, there's the perfect seal provided by Transite's Ring-Tite® Coupling, which also speeds and lowers the cost of installation. Many communities also use Transite Sewer Pipe . . . for its long life and maintenance economy. For information, write Johns-Manville, Dept. B-3, Box 14, New York 16, N. Y. In Canada, Port Credit, Ont.

Co-operate with your Water Department Officials. Their work is vital to your community's health . . . economy . . . and growth

JOHNS-MANVILLE

100 YEARS OF QUALITY PRODUCTS...1858-1958



How Joel Dean Finds the Value of an Investment in a \$15,000 Automatic Screw Machine

(Condensed version)

FIRST, you make these basic estimates . . .

Years from Installation Date (1)	Capital Outlays Incurred or Avoided (2)	Operating Improvements & Cost Savings (3)	Tax Depreciation New Machine (4)	Old Machine (5)	Increase in Taxable Income (6) = (3) - (4) + (5)	Difference in Income Taxes at 50% Tax Rate (7) = 50% of (6)
0	<div> <div>New machine cost —\$15,000</div> <div>Old machine rebuilding avoided +4,000</div> <div>Old machine salvage received +300</div> </div>	—	—	—	150	—75
0-5		22,500	6,429	2,000	18,071	—9,035
5-10		16,250	4,643	2,000	13,607	—6,804
10	Another machine rebuild avoided +4,000	—	—	—	—	—
10-15		10,000	2,857	2,000	9,143	—4,572
15-20		3,750	1,071	2,000	4,679	—2,340
20	<div>New machine salvage received +750</div> <div>Old machine salvage foregone —300</div>	—	—	—	225	—112
TOTALS	—\$6,250	52,500	15,000	8,000	45,875	—22,938

This is the crucial estimate, and it's most important in the first 10 years of the new machine's life. The savings expected in later years add little to present worth, as you can see in column 9, because they are so heavily discounted.

These aren't in themselves cash flows. But from them you can calculate the taxes in column 7, which are cash flows.

The minus signs in this column mean that taxes will be higher because earnings of the new machine are higher.

NOW, you can compute the rate of return . . .

Years from Installation Date	Net Cash Flows (8) = (2) + (3) + (7)	Present Worth of Net Cash Flows at 23% (9)
0	—10,775	—10,775
0-5	+13,465	+8,183
5-10	+9,446	+1,825
10	+4,000	+395
10-15	+5,428	+342
15-20	+1,410	+27
20	+338	+3
TOTALS	+23,312	0

The purpose of column 9 is to find what discount rate, when applied to the income stream shown in column 8, will make the present value of the entire stream equal to the adjusted net cost of the investment. In this example, the rate is 23%. When it is applied to each item in column 8, you will find that the present value of that whole income stream just offsets the cost of the investment—and so, column 9 adds up to zero.

analysis is to make reasonable estimates of the cash inflow that the investment should yield each year of its life. But this shouldn't be too onerous a task for a management. Some estimate of the probable flow of returns is the essence of any investment decision.

To see how Dean's system works, there is, at left, a condensed version of the timetable of cash flows that Dean would build to estimate the worth of Flugelheim Co.'s proposed investment in that new \$15,000 automatic screw machine—on the assumption that the new machine will yield a before-tax net return of \$5,000 in the first year—a return that, as the machine wears out, will diminish by 1/20th in each succeeding year.

Dean's measure of the project's worth is there at the head of column nine—the 23% discount rate, which is the project's rate of return.

This 23% figure is the crucial one. Pres. Kelly of Flugelheim Co. can compare it with the return he would get from alternative investments, to see which was best. And by discounting the net cash flows at a rate equal to his company's cost of capital—say, 10%—he can also compute the present worth of the new screw machine to find what the machine for which he pays \$15,000 is really worth to him. This calculation of present worth can be important to a company that sells or leases equip-

Here it is!

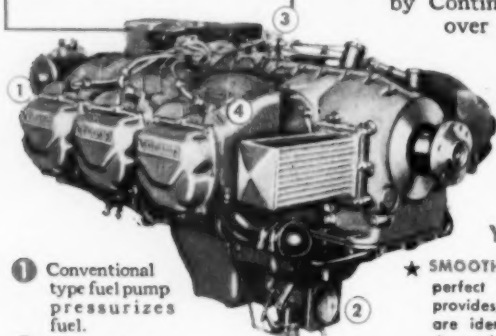
ANOTHER CONTINENTAL "FIRST"

... Greatest Aircraft Advance in Recent Years

CONTINENTAL CONTINUOUS-FLOW FUEL INJECTION

FIRST REALLY SIMPLIFIED FUEL INJECTION

No more running parts than carburetor fuel system! Very close tolerances eliminated—no plungers—nothing to get out of adjustment. It's as simple as this:



- 1 Conventional type fuel pump pressurizes fuel.
- 2 Metering valve linked to throttle regulates fuel flow. NO RUNNING PARTS.
- 3 Manifold valve divides fuel uniformly to all cylinders. NO RUNNING PARTS.
- 4 Nozzles discharge fuel into cylinder. NO MOVING PARTS.



Dramatic and convincing proof of the system's superiority is the world record distance flight of Capt. M. L. "Pat" Boling, from Manila, P.I., to Pendleton, Ore.—approximately 7,000 miles—in a current production Beechcraft Bonanza J35, on which Continental Continuous-Flow Fuel Injection is standard.

Continental Motors, power specialists since 1902, present the Continental Continuous-Flow Fuel Injection System as the greatest advance in its field in many, many years. Designed, developed, and built exclusively by Continental, and proved in well over a million miles of trouble-free flight, it brings an entirely new concept of performance, safety, dependability and economy to flying, vastly broadening the usefulness of airplanes.

YOU GET ALL THIS:

- ★ **SMOOTHER OPERATION**, because with the perfect fuel distribution which the system provides, power impulses from all cylinders are identical. Each cylinder does an equal share of the work.
- ★ **GREATER ECONOMY**, because with each cylinder getting exactly the same amount of fuel, all cylinders can be leaned out uniformly for better economy. Lean-out needn't stop, as with a carburetor, when the leanest cylinder begins to starve while others could be leaned still further.
- ★ **INCREASED RANGE**, because fuel consumption can now be predicted accurately. Gauge on instrument panel is calibrated to correlate injection system pressure with fuel consumption, in gallons per hour.
- ★ **HIGHER HORSEPOWER** with no change in engine displacement. The engine "breathes" freely, with the carburetor's restriction to air flow removed.
- ★ **BETTER ACCELERATION**, with none of the characteristic flat spots just above idle. Fuel doesn't have to travel from a distant carburetor; it's right at the cylinder all the time.
- ★ **FREEDOM FROM ICING**. The engine icing hazard is eliminated entirely, because the refrigerating effect of vaporizing fuel at the carburetor has been removed.
- ★ **REDUCED MAINTENANCE**, resulting from extreme simplification. (See cut.)

With Continental Fuel Injection, no carburetor heat is required—ever. You always use the coldest air available, for maximum power. Starting is fast and sure; accurately-controlled fuel metering to all cylinders takes care of that. Spark plugs last longer, too, because—thanks to uniform distribution of loaded fuel—all cylinders receive the same amount of lead.

WRITE FOR INFORMATION

Continental Motors Corporation

AIRCRAFT ENGINE DIVISION
MUSKEGON • MICHIGAN

MEMO

FROM:

TO:

PLAN 59

ment and wants to decide what price to charge its customers.

• **Custom-Built**—Dean has not worked out in advance a set of standard formulas for projecting and combining the expected net returns, the costs of capital, the company's debt ratio, or other key variables involved in an investment decision. Each of his analyses and sets of projections must be custom-built. And that means that Dean's system isn't likely to be used for any but important investment problems, where the hoped-for gain in accuracy is likely to exceed the cost of the analysis.

Mr. Kelly obviously isn't going to call in Joel Dean to find out whether to get that one screw machine. If he were looking for a quick, relatively reliable way of handling his problem, he would probably do better to have his engineers tackle the analysis with the MAPI formula.

II. Formula From MAPI

The MAPI approach was developed by economist George Terborgh (BW—Jul.30'55,p84) in 1949. Since then he has been working to make it more effective—but to make it more simple, too. Now MAPI has published a new study of his, *Business Investment Policy*, which seeks to make from a complex mathematical formulation a do-it-yourself investment analysis kit to help businessmen, engineers, and accountants.

The MAPI formula aims to produce a figure called the "next-year rate of return." That's the return you'll get from an investment in new equipment if you make it now, rather than wait one more year.

This figure gives a businessman a guide to the time when the return from a capital investment is greater than the cost of the funds he'll have to use, than the return that his company usually seeks from its investments, than the returns available from other investments.

Basically, Terborgh's next-year rate of return is the same as Joel Dean's discounted cash flow rate of return. Terborgh gets his rate-of-return figure for the whole life of the investment by a standardized way of estimating the capital consumption cost of the new machine. Dean builds a complete, tailor-made projection of this cost of the new machine during its entire anticipated service life. Where Dean cus-



If you're fussy about the mixing...

Virtually any kind of mixing in which you are interested . . . in chemical, pharmaceutical, drug, cosmetic and food processing . . . can be handled with extra precision, speed and economy by mixers made by Read Standard.

Capitol's Readco division is also a leading producer of commercial bakery equipment, a pioneer in bakery automation. Its equipment is improving quality, increasing production and lowering costs for bakeries across the country.

Capitol is a versatile company. Millions of America's homes are protected against the elements by Capitol aluminum prime windows, window walls and combination insulating doors, windows and screens.

In addition, Capitol and its divisions supply products of aluminum to many diverse fields. Industrial fabricators get aluminum billets from Capitol furnaces, and extrusions from modern Capitol presses. Tanker crews tread gangways, catwalks and gratings produced by the Readco division. Streets are lit by their light standards, highways guarded by their tough aluminum rails.

This sum of technical ability . . . creative design and engineering skills, complete facilities from ingot to extrusion and fabrication . . . can be put to work wherever light metals are involved.

Inquiries about Capitol facilities and products are welcome. Write to Capitol at Mechanicsburg, Pa.

Read Standard Division

CAPITOL PRODUCTS CORPORATION

Manufacturing facilities: Mechanicsburg, York, Philadelphia, and Hazleton, Pa.
Chicago • St. Louis • Sherman, Texas • Anaheim, Calif.





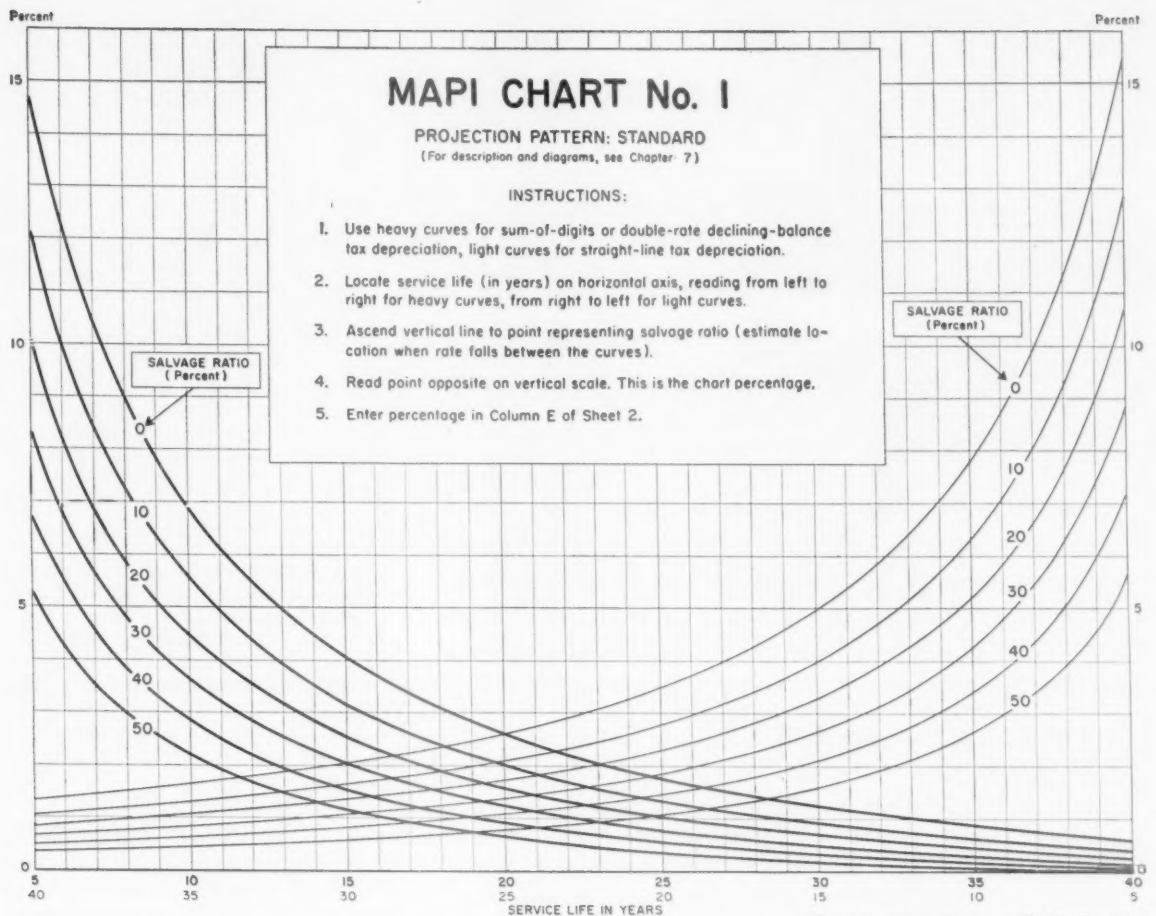
GOOD SIGN FOR BEARING BUYERS! On Michigan's famed Willow Run Expressway, signs like the one above point to the newly completed Hoover plant. Here, new equipment and modern techniques are skillfully utilized to produce increased quantities and additional types of America's *Quality Balls and Bearings*. Hoover has made these major improvements to provide better service for present customers . . . to serve more and more new customers. You are invited to write for complete information about Hoover products. Watch Hoover for future announcements of interest to bearing buyers.

Hoover[®]

BALL AND BEARING COMPANY

5400 South State Road, Ann Arbor, Michigan

Los Angeles Sales Office and Warehouse: 2020 South Figueroa, Los Angeles 7, California



MAPI's mass-produced aid to businessmen—the chart that solves the toughest part of the MAPI replacement formula.

tom-builds his long-range forecasts, Terborgh mass-produces them.

• **What's Involved**—The company that uses MAPI's technique to guide its decisions has to sort out five different factors that go to make up that "next-year rate of return."

First, the analyst must figure the operating advantage to be gained from the new equipment: How will it affect direct and indirect labor costs? Maintenance? Tooling and supplies? Downtime for repairs and time for scrap and rework? Inventories? Power costs? Will it need more or less floor space? And will property taxes and insurance go up or down? And, since most modernization projects are not simply one-for-one replacement jobs, production volume or product quality will probably change—and the change will be worth money. The sum of all these things makes up the project's operating advantage.

Then, there's capital consumption avoided: If the new project is delayed for a year, the old equipment in the plant may need some money spent on it to keep it going. This is

the equivalent of a new investment and at least part of the cost of overhaul should be regarded as a capital cost charged to the year. Moreover, there'll probably be a drop in the old machine's disposal value after another year's use—just as the trade-in value of a car declines after an extra year's use.

Third, there'll be added income tax. This has to be subtracted from the gains represented in the formula's first two factors.

Next, there's the cost of consuming the capital that's to be spent on the new equipment. This is the tough part, the factor that George Terborgh and his MAPI colleagues Eric Schiff and Richard MacNabb have labored mightily to simplify. Toward that end they have produced a set of standardized charts—one of them is printed above—from which a businessman can easily work out an approximation of his project's first-year capital consumption cost.

The charts themselves are produced from an elaborate mixture of: the rate at which the new project's earnings will decline; the service life of the new equipment, its final value for sale, trade-

in or scrap; the corporate tax rate, the company's depreciation system; the ratio of the company's debt to its total investment, the interest rate it pays on borrowed capital, the after-tax return it gets on equity capital.

The MAPI charts have pre-computed all these things. They have assumed that a 25% debt ratio, a 3% interest rate, and a 10% after-tax return on capital are about the normal for most companies. There are three charts—because MAPI offers the analyst three general patterns in which the earnings of a new machine will decline over the years of its service life. In some cases, the machines will produce half their earnings by the time they have worked half their service life; in others, they'll run off one-third of their earnings when their service life is half over; some will produce two-thirds of their earnings in half their estimated service life.

The fifth large piece of the MAPI formula is the net investment in the project. This is far simpler. From the total cost of buying and installing the new equipment, subtract the money you get from salvage of the old machine.



**industry
is pouring
into**

GEORGIA

A LEADER IN PRODUCTION—in 10 postwar years, Georgia's number of production workers in industrial plants have increased to an additional 62,920 factory wage earners—*fourth largest in the nation!* An increase in production workers is the only real measure of healthy industrial expansion.

A GREAT LABOR POOL—of men and women capable of quickly learning new skills, provides industrialists with the most important tool in their Future Planning Kit.

GEORGIA'S equitable tax structure, abundant water, power and natural gas facilities, healthy year round climate . . . all combine to make it good business to produce in Georgia.



for further information write to Department K-89
Scott Candler, Secretary

GEORGIA Department of Commerce

100 State Capitol, Atlanta, Georgia

MEMO

FROM:

TO:

'59
PLAN

ery and the money you would have had to spend to keep the old stuff going.

• **How It Works**—Pres. Kelly of Flugelheim Co. might shy away from these apparent complexities when trying to decide whether to get that new \$15,000 automatic screw machine. But if he persisted he would find that it is a great deal easier to solve his equipment replacement problem with MAPI's formula than to struggle unaided through his company's corporate income tax return.

Here's how he would do it with no more than one sharp pencil and a couple sheets of paper:

Operating advantage: \$5,000 cut in first year from cost of direct labor, maintenance, and so on.

Capital consumption avoided: Overhaul of the old machine would have cost \$4,000, prorated over 10 years. So we can figure that we are saving \$400 the first year by not putting money into the overhaul job.

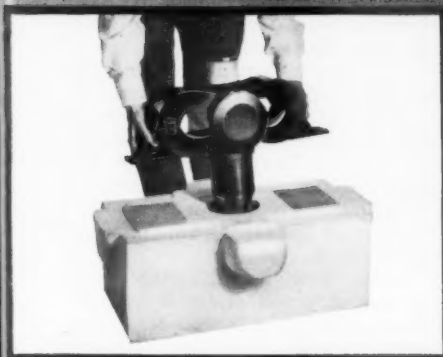
Income taxes: From the total of those two—\$5,400—we have to cut 50% for income taxes. That leaves a next-year after-tax advantage of \$2,700.

Capital consumption costs: Now we turn to MAPI's charts. We're estimating that the new machine has a 20-year service life, that we'll get back 5% of its original cost when we finally sell it, and that its earnings will flow to us at such a rate that we'll get half of them by the time its service life is half over. And, of course, we already know that we're using that method of depreciation for taxes known as "sum of the years' digits." So we follow the line on the chart that takes care of these things. And here at the side we get the answer: 2.3%. That's the proportion of the original cost of the project that we should charge off as the cost in the first year of using up our capital on this project.

The answer: 2.3% of \$15,000 is \$345. Subtract this from the after-tax advantage of \$2,700—and it's \$2,355. Now hold that figure while we get the last two elements.

The net investment: The total cost of the new machine is \$15,000. But we take from that the \$300 we get for salvage of the old machine and the \$4,000 we would have had to spend to keep the old one going. Capital gains taxes on the sale of the old machine add \$75. Result: \$10,775.

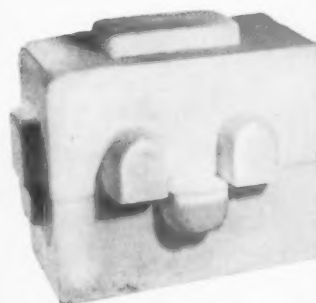
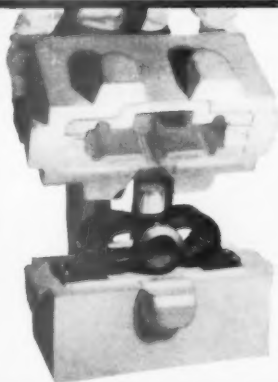
Last step: What percentage is \$2,355 of \$10,775? That's the rate of return of



HERE'S HOW G.E. PROTECTS MAGNETRONS SHIPPED TO DEW LINE

Photos show how molded urethane package safeguards General Electric magnetron against shock and vibration in a simple corrugated carton—even at 50° below zero! Magnetron is bolted to aluminum plate bonded into bottom pad during molding. Projections molded at sides of pads provide air-space moisture barrier.

Costly conventional packaging would be 50% bulkier, 300% heavier! New package was developed by Standard Plastics, Inc. of Fogelsville, Pa.



for heavy duty packaging... lightweight URETHANE FOAMS

This very practical and economical package is one more example of urethane versatility.

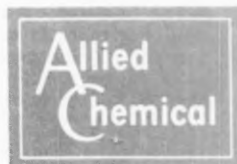
Urethane foams ranging from flexible to rigid are well worth investigation wherever impact absorption, vibration isolation, comfort cushioning, thermal or acoustical insulation, or added structural rigidity is needed. Their unusual mechanical and dielectric properties are broadly controllable to meet your special requirements.

Being equally versatile in fabrication (molded, sprayed, poured to foam in place, or worked from slab stock) urethane foams frequently permit substantial production economies while they solve your difficult design problems.

If you have a potential use for urethane, perhaps our application laboratory can assist in its development. We produce NACCONATE® Diisocyanates, essential urethane components.

NATIONAL ANILINE DIVISION

40 RECTOR STREET, NEW YORK 6, N. Y.
Atlanta Boston Charlotte Chattanooga Chicago Greensboro Los Angeles
New Orleans Philadelphia Portland, Ore. Providence San Francisco





TO Chicago, Ill. FROM Wilkes-Barre, Pa.
 DEPARTURE 8:15 a.m. ARRIVAL 11:05 a.m.
 NO. PASSENGERS 6 AIRCRAFT Aero-Commander
 PURPOSE Plans Board Conference

Circulation 222,615 June 30, '58 ABC

THE WORLD'S MOST WIDELY READ AVIATION MAGAZINE
 FLYING • ONE PARK AVENUE • NEW YORK 16, N. Y.



Attractive translucent Stran-Lite Sheets cover over half of building front to give natural interior light. This 80' x 120' Rigid Frame located in Pensacola, Fla.

Stran-Steel Buildings . . .

THE CUSTOM-BUILT LOOK OF QUALITY

AT A VOLUME-PRODUCTION PRICE!

Though its components are mass-produced to reduce costs, each Stran-Steel Rigid Frame building is tailored to the size, function and appearance you specify! You get 100% useable clear-span interiors—ideal for factory, warehouse or retail outlet. You get a firesafe heavy-gage all-steel structure that goes up quickly, needs little maintenance. Five-year purchase plan calls for initial investment of only 25 per cent. For more facts, mail the coupon or call the Stran-Steel dealer listed in your Yellow Pages under *Steel Buildings or Buildings—Steel.*



Dept. BW-18
STRAN-STEEL CORPORATION
 Detroit 29, Michigan • Division of
NATIONAL STEEL CORPORATION

Stran-Steel Corporation, Dept. BW-18
 Detroit 29, Michigan

Rush complete literature on industrial buildings.

Name

Company

Address

City Zone State

MEMO

FROM:

TO:

PLAN 59

the project. And the result is almost 22%.

This figure of 22%, which emerged from MAPI's pre-computed formulas, is almost equal to the 23% rate of return computed by Joel Dean's continuous discounting of anticipated cash flows. The two systems, using apparently different techniques, can chew up the same set of facts and estimates and spit out almost consistent answers.

Like Joel Dean's 23% rate of return, the MAPI 22% rate can be used to test the value of investing in that screw machine against other investment opportunities, or against Flugelheim Co.'s cut-off rate for this kind of investment project.

And if Kelly is still curious about the payout period of his investment, he can calculate it—with a far greater degree of realism—from either Dean's or MAPI's approaches. By either measure, his screw machine project will pay out in about four years, since it's yielding a rate of return of 22% or 23% each year on the original net investment.

III. In the Field

By now, any management man worth the title on his door will have spotted a factor that underlies all the estimates of earnings and costs. It is the forecast of the operating rate of the new machinery.

On that, everything else depends. And both Dean's and MAPI's formulas recognize that it's up to the businessmen themselves to work out the most probable operating rates.

• **For Management Only**—No formula will tell a company whether it can keep selling the products it makes, whether the economy as a whole is set for a dip or a rise, whether competitors are about to sweep it off its foundations with a flood of new products.

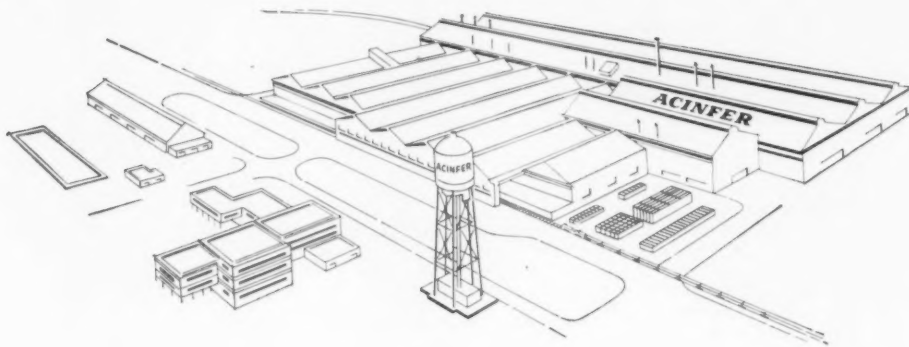
The businessman still has to work these things out for himself and decide what the risks are. And because the value of investments in modernization depends heavily on these elements, neither Terborgh nor Dean claims any scientific precision for his system.

The question for management is not, "Can I get really accurate forecasts by using a more complex system?" It is, "Is this a sensible and efficient way to process all the different estimates about a modernization project? Does it force me to consider factors I've been neglecting? Does it help me to look ahead



A Lester B. Knight & Associates, Inc. Case History

ACINFER, S. A. PLANT ENGINEERED BY KNIGHT...



...JUDGED MOST MODERN IN ARGENTINA FOR 1958

The Knight organization had overall responsibility from planning to successful operation of a large malleable and grey iron foundry and machine shop recently awarded a Diploma of Honour by McGraw-Hill's "Ingenieria International Industria" as the most modern industrial plant in the Argentine Republic. This integrated production-jobbing plant, the largest in South America, was designed by Knight engineers who purchased and shipped the facilities, supervised installation and furnished a team of U. S. foundrymen to operate while training Argentine personnel to take over. The Knight organization has designed plants and developed modernization programs for more than 700 clients in various parts of the world.

**For consultation on any modernization
program call on Lester B. Knight & Associates, Inc.**

Knight Services Include:

Plant Engineering • Management • Organization • Industrial Engineering • Wage Incentives
Cost Control • Modernization • Mechanization • Materials Handling • Automation
Survey of Facilities • Architectural Engineering • Construction Management • Methods
Flexible Budgets • Production Control • Paperwork Management



Lester B. Knight & Associates, Inc.

Management, Industrial and Plant Engineers

Member of the Association of Consulting Management Engineers, Inc.
549 W. Randolph St., Chicago 6, Ill.

917 Fifteenth St., N.W., Washington, D. C.

New York Office—Lester B. Knight & Associates, 375 Fifth Ave., New York City 16

Knight Engineering Establishment (Vaduz), Zurich Branch, Bahnhofstrasse 17, Zurich, Switzerland

Businesslike in Operation... Economical in Maintenance—

JOHN DEERE Industrial EQUIPMENT

Shown here is the new John Deere Crawler-Dozer, one of a complete line of low-cost, big-capacity John Deere Crawler units specially engineered for industrial use.



BUSINESSLIKE—that's the word for these new John Deere Industrial units. Trim and efficient, they are businesslike in the eager way they accept more than their share of the work load. They are businesslike in their way of cutting production corners and trimming operating costs to a new low figure. And they are businesslike in their stay-on-the-job stamina, and their easy, economical upkeep.

Accustomed to businesslike appraisal of equipment, you'll find that by all the usual yardsticks John Deere Industrial Equipment fits exactly one of your biggest needs—for highly maneuverable, compact units that are capable, economical, and built to more than pay their way over a long life span.

Engineered for Industry

- Commercial Construction
- Logging and Clearing
- Home Building, Landscaping
- Road and Streets
- Pit, Quarry, and Mine
- Oil and Gas
- Public Works
- Public Utilities
- Plumbing and Heating
- Manufacturing and Warehousing

There's a John Deere Wheel or Crawler Tractor-Loader to handle your materials-handling jobs at rock-bottom costs.



JOHN DEERE

Industrial TRACTORS and Equipment

For Further Information Write JOHN DEERE, Industrial Division • Moline, Ill.

116 Special Report

MEMO
FROM
TO
59

more clearly—and with a harder calculation of the probable dollar returns?"

• **Converts**—The answer seems to be "Yes." At least, an increasing number of major industrial companies are using these more complex analytical techniques, and are finding that they work well—usually in adaptations to a company's particular needs. Many companies have made audits of the actual returns from new equipment and compared these with the forecast returns—with encouraging results.

Allis-Chalmers Mfg. Co. has used the MAPI system for several years, made post-audits in 1956 and 1957. It found the difference between the estimated gain and the money the company actually did gain was no more than 6%.

This was the record over seven of Allis-Chalmers' plants. Plant-by-plant, the estimates and the post-audits showed up far wider variations. But these were ironed out over the larger range of the company's operations, since the over-estimates and under-estimates for individual plants pretty consistently canceled each other out.

• **Balance for Error**—Indeed, one of the purposes of the MAPI approach is to help a company consider the wide range of its operations when it plans to modernize. There's little use in analyzing a single machine or a single plant by these methods if a short-sighted system of organization and a lack of cohesion in a company jeopardizes the profits that can come from modernization.

Allis-Chalmers thinks the MAPI system helps it take a broad view of modernization. And so do many other users of the MAPI method—A. O. Smith Corp., Draper Corp., Cooper-Bessemer Corp., Ingersoll Milling Machine Co., ACF Industries, Inc., Barber-Colman Co., Link-Belt Co., and De Laval Steam Turbine Co.

• **Military for MAPI**—One of the most important recent converts to MAPI's approach is the nation's largest machine tool owner—the Defense Dept. The Air Force alone owns 150,000 machine tools and about 50 large manufacturing plants, including installations like the Ford engine plant in Chicago and the Convair plant in Fort Worth.

The Air Force—and other services—are engaged now in a modernization drive and are persuading their contractors to replace inefficient tools from the Defense Dept.'s enormous inventory. The drive has two aims: to cut the cost of the military's end-items, and to get



Latest styles arrive early...on low cost Air Express

CHECK YOUR AIR EXPRESS SAVINGS over any other complete air service

CITY TO CITY...DOOR TO DOOR (for a 25 lb. package)	AIR EXPRESS		YOU SAVE
	Miles	Cost	
OKLA. CITY to MINNEAPOLIS	714	\$7.25	\$1.25 to \$6.89
NEW YORK to CEDAR RAPIDS	929	8.85	1.05 to 9.21
CHICAGO to SANTA FE	1123	10.45	1.30 to 10.54
L. A. to CORPUS CHRISTI	1347	12.85	2.55 to 11.39

Apply these typical examples to your shipping problems

To make a big splash in the market, manufacturers rush their swim suits to stores in hours—with Air Express. Save time and dollars, too! . . . Air Express, symbolized by the big "X," offers *you* the same high speed and low cost. Plus exclusive one carrier door-to-door delivery to thousands of U. S. cities and towns. Prove it with a 'phone call.

 **AIR EXPRESS** 

GETS THERE FIRST via U. S. SCHEDULED AIRLINES

CALL AIR EXPRESS  ...division of RAILWAY EXPRESS AGENCY

HERE'S PROOF...



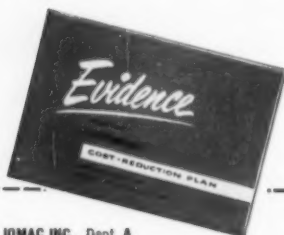
GLOVE COSTS REDUCED 43%

by the **JOMAC** COST-REDUCTION PLAN

Customer: well-known manufacturer of aircraft parts. Operation: strip steel stamping. This is just one of scores of Jomac Cost-Reduction Plan case histories we can show you. Write for "Evidence" booklet shown below. Get proof that this plan can work for you, too!

JOMAC INDUSTRIAL GLOVES

Plants in Philadelphia, Pa., and Warsaw, Ind.
In Canada: Safety Supply Company, Toronto
In Europe: North-Jomac Ltd., London, W1



JOMAC INC., Dept. A,
Philadelphia 38, Pa.

☐ Send us a copy of your "Evidence" booklet

☐ Have a representative contact us

Name

Company

Address

City State

MEMO

FROM:

TO:

'59
PLAN

the best tools into use immediately.

But since most of its huge inventory of machine tools was built up during World War II, many of Defense's machines are obsolete. Many of them cannot, for instance, cut the exotic metals used in missiles and new airplanes.

So when a contractor wants Defense to pay for an expensive new machine tool for use on a relatively short contract, the department calls for the contractor to justify the spending of government funds by completing a modified MAPI analysis of the machine.

Where's the Money?

As understanding and use of guides like those provided by MAPI's replacement formula spread wider, more and more of U.S. industry recognizes that modernization is not just the worry of the plant engineer—that a modernization program must involve all major parts of a company's structure.

It emphasizes—if emphasis were needed to prove it—that in any program the critical questions are still those that can be answered only by the man right at the top: Have we got the money for modernization? And, if we haven't, can we get it on satisfactory terms?

• **Difficult Search**—Strictly speaking, there's no way to trace the source of the dollars that U.S. industry spends on plant and equipment—or salaries or advertising, or any other specific area.

Psychologically, however, most companies have got into the habit of thinking that modernization is—or should be—financed mainly out of depreciation reserves. In the last few years, funds set aside for depreciation have made up about 60% of corporate spending on new plant and equipment. This year, corporations' depreciation allowances will equal nearly 70% of their total capital spending.

• **Ways to Collect**—How a company takes its depreciation allowances—by the old straight-line technique, or by the newer sum-of-digits or double declining balance methods—affects the amount of cash it has for modernization investments. The newer methods are certainly worth more to industry. Under the old straight-line method, a company could charge off just half the original cost of a machine after half the machine's service life. With the double declining balance method, it can charge off about two-thirds of the machine's cost in the same time. Under the sum-

For record-breaking sales
and profits — nothing does
it like incentive-producing
American Express Travel
Awards . . . priced easily
within your budget and
arranged by experts from
the finest, most complete
travel service — 108 years
of experience — 399 offices
world-wide.

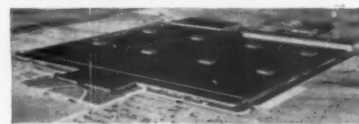
For complete information, write:

AMERICAN EXPRESS TRAVEL SERVICE

65 Broadway, New York 6, N. Y.

Whitehall 4-2000

MAXIMUM SECURITY at



THE FORD MOTOR COMPANY with TELKEE, the Modern System of positive Key Control

At Ford's new Sharonville, Ohio plant—and at dozens of other Ford plants across the country—TELKEE Systems assure constant, fool-proof control over the keys to every lock. TELKEE keeps keys in authorized hands; eliminates problems of lost keys; cuts costs of replacement locks and keys.

Available in capacities from 21 to 2240 key changes, there's a TELKEE System to fit your plant, building or office. Write today for "The Key To The Whole Thing"

P. O. MOORE, INC.

A Subsidiary of SUNROC Corporation



The MOORE KEY CONTROL System

GLEN RIDGLE 22 PENNSYLVANIA

P. O. MOORE, INC.,
Glen Riddle 22, Pa.

Please send full information on TELKEE Systems.

Name

Company

Address

City

M-m-m-m...

I'm glad
my boss
got this new
Marble
posture chair



Since the day this new posture chair was fitted to my boss, things around here just haven't been the same. Now we get more work done faster. He's much more cheerful, seems relaxed all the time, no matter how busy we are.

She's right. These Marble posture chairs *do* provide healthful, relaxing comfort.

Planning office modernization or expansion? Write today for the name of your nearest Marble dealer and your free copy of "Fine Office Chairs by Marble".



The World's Largest Selection of
Fine Office Seating

Contemporary • Modern • Traditional

of-the-year's-digits system, the depreciation allowance adds up to about three-quarters of the machine's cost after half the machine's service life.

Faster depreciation doesn't cut your total taxes in the long run. It only defers them. But money in the hand—and that's what deferred taxes amount to—is always worth more than the promise of money in the future, because you have the use of the money meantime.

• **Squeezed Source**—The second great source for funds for industry's modernization needs is retained earnings. Since early last year, when the recession's effects started showing up in profit-and-loss statements, this source has been severely squeezed.

Now, as business begins moving out of the recession, companies are finding that profits and modernization projects are, to an extent, a chicken-and-egg proposition. For many individual companies it will take more than just the generally improving business climate to push profits up; for these companies it will take modernized plant, with its improved efficiency, to do the job. A company with its profits down will be committing suicide if it tries to face more dynamic competitors with obsolete and inefficient equipment.

• **The Lenders**—So if a business that's hungry for profits doesn't have the cash with which to modernize, its best hope for continued existence is to get the money it needs from outside sources.

There's a wide range of these sources, and it's impossible to generalize about which one a company should best tap.

Cash can come from sales of stocks and bonds; by borrowing from banks or insurance companies, from pension funds or the Small Business Administration. Sometimes a company can hold on to its cash by working out leaseback deals or getting the equipment it needs by making time-purchases. It can raise cash by selling off some of its assets.

How to find the best way of getting the cash lies beyond the scope of this report. **BUSINESS WEEK** has reviewed the subject in an earlier Special Report (BW—Nov. 17 '56, p64) and in many other articles.

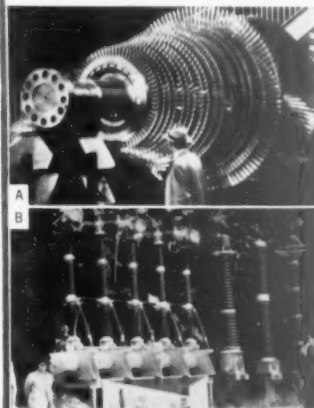
REPRINTS AVAILABLE

Single copies of this report on Modernization will be available in about four weeks to **BUSINESS WEEK** subscribers upon request without charge. Other copies will be billed at the following rate: 1 to 10 copies, 50¢ each; 11-100 copies, 40¢; 101-1,000 copies, 30¢; over 1,000, prices on request. Address orders for reprints to Reprint Dept., **Business Week**, 330 West 42nd Street, New York 36, N. Y.



Our impressive equipment exhibits at the Brussels Fair have provided great excitement for visitors interested in power equipment.

These are examples of Brown Boveri equipment now in use throughout the world. Combine your present needs for efficiency and economy with an eye to increased demands for power in the years ahead.



A The 1-p.-1-p. rotor of a three-cylinder steam turbine rated 110,000 kW 1810 psia, 1005° F, with reheat to 975° F between h.p. and i.p. cylinders.

3 One pole of an outdoor airblast circuit-breaker type DHVF 380n 10 ax Voltage 400 kV; rated current 2000 A; three-phase interrupting capacity 25,000 MVA, three cycle tripping time.

Other equipment exhibited at the fair ranges from a 6000 HP locomotive to high power transmitter tubes and thus furnishes an interesting cross-section of Brown Boveri's vast manufacturing program. Most items exhibited have been intercepted on their way to several continents including the United States.

BROWN BOVERI CORPORATION

19 Rector Street, New York 6, N. Y.

Yes, you can save cable dollars when you go to higher voltages!

For 15 kv and up—consider Anaconda Durasheath rubber-insulated, neoprene-jacketed power cable! Its lighter weight, flexibility of installation, ease of splicing may mean lower installed costs!

With today's trend toward higher and higher voltages, better look into the advantages of Durasheath®—Anaconda's superior-quality rubber-insulated power cable. It may mean big over-all cost savings!

New Anaconda insulating compounds, improved shielding, and advances in cable manufacturing technique have now made it practical to extend Durasheath's voltage range beyond 15 kv . . . to

25 kv . . . and to even higher voltages.

In lower and medium voltage ranges (600 volts to 15 kv), Durasheath has already earned an outstanding reputation for safety, dependability, long life—and money-saving versatility. For Durasheath can be installed overhead . . . in ducts . . . and underground, in continuous runs with minimum splices. Its flexibility and light weight are important, too, in cutting the costs of supporting structures.

Now, Anaconda's proven "know-how" in cable construction has made it possible to bring all these advantages to *high-voltage* Durasheath cable! If you're "going up" to higher voltages, see the Man from Anaconda about Durasheath. He will be glad to help you work out your particular problem. Or write: Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York. *Trademark



ANACONDA DURASHEATH ALL-PURPOSE POWER CABLE

Available in all sizes, single and multiple conductor, copper or aluminum, 600 to 15,000 volts and higher.

INSULATION. Type RHW, Anaconda ANW, AHW or AB, each designed for specific purposes and described fully in new publication DM-5817.

JACKET. Specially compounded neoprene with high resistance to flame, oil, acids, alkalis, sunlight and ozone, high tensile strength and flexibility at extremes of temperatures. Densheath (PVC) and Polyethylene jackets are available for special applications.



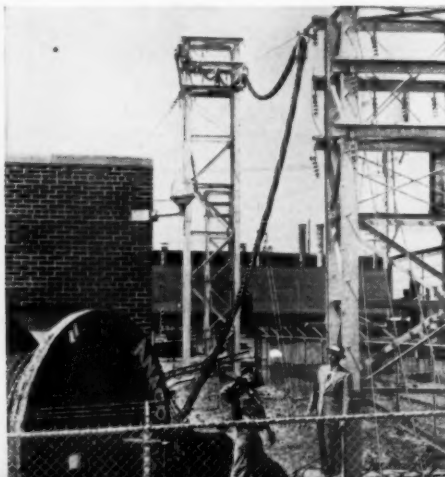
SEE THE MAN FROM
ANACONDA®
FOR DURASHEATH CABLE

Anaconda Durasheath is 3 cables in 1, because . . . it can be installed—

IN DUCTS



AERIALLY



UNDERGROUND



How Modern Is American Industry?

A Report by the McGraw-Hill Department of Economics

THE U.S.A. is starting a new period of economic growth, as we leave behind the recession of 1958. This new period presents a challenge to the nation, to the business community and above all to the individual company — to grow at a profit.

By now it is clear that growth is the normal way of life for the U.S. Economy. Since 1947, our national product has been growing at a rate of 3.7% a year. And no recession, even the latest and most publicized, has interrupted the trend for long. Now the economy is growing again.

But the conditions of growth are far different from those that prevailed in the years 1947 to 1957.

Today growth in the economy does not mean pressure on capacity, for most industrial firms. It does not mean easy profits. Rather, this is growth under highly competitive conditions, with profits dependent on a firm's ability to hold down costs. **Is our plant and equipment modern enough to do the job?**

A New Survey

To find the answers to this question, the McGraw-Hill Department of Economics has just completed a special survey of business needs for modernization. **The survey shows that it would cost \$95 billion to replace today's obsolete equipment.** And this is a priority job, if business is to get costs down for the years ahead.

This tremendous need for modernization presents a challenge to the U.S.A. as a nation. The Communist powers are making a strong and disciplined effort to demonstrate that they can out-produce us — that they can "plow us under" in a contest of industrial strength.

It is a challenge to American business. Our people expect a continuously rising standard of living. Our workers expect wage increases. And often their demands mean price inflation — unless we can achieve sharp gains in output. The public demands higher national income without inflation. This is the challenge to business as a whole.

It is a challenge to the individual firm. Growth in the economy no longer means an automatic rise in sales and profits for any particular

to ensure our continuing superiority over the Communist world, to match every wage increase with higher productivity, to do business in a competitive economy at satisfactory profit to the individual firm.

This statement sounds shocking at a time when much industrial capacity is idle and the recession just behind us is being blamed on a surplus of capital goods. But the facts speak for themselves. Here is the record on the past decade of investment in new plant and equipment, and here is our

THE MODERNIZATION JOB AHEAD: \$95 BILLION

The McGraw-Hill Department of Economics asked a wide sample of manufacturing companies, and experts in other industries, "What would be the cost to replace all obsolete facilities with the best new plant and equipment?" Here is a summary of the estimates. (Details on next page.)

MANUFACTURING AND MINING.....	\$34.3 Billion
PETROLEUM INDUSTRY	5.3
TRANSPORTATION AND COMMUNICATIONS....	18.4
ELECTRIC AND GAS UTILITIES.....	12.0
FINANCE, TRADE AND SERVICES.....	25.0
TOTAL: ALL BUSINESS.....	\$95.0 Billion

company. There are no shortages; industrial capacity is ample. So to participate in growth, the individual firm must achieve better quality or lower costs than its competitors. Otherwise, there will be no profit in growth and no success story for the company.

Is business prepared today for these challenges? The answer, from our study, is clearly "No". The production and distribution facilities of the U.S.A. are not efficient enough

new study of the job that still remains to be done.

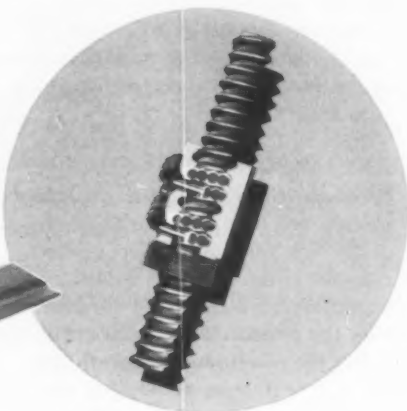
Decade of Expansion¹

Since 1947, private business in the U.S.A. has invested \$291 billion in new plant and equipment. Our manufacturing capacity has increased about 80%; electric power capacity, 145%; capacity for basic raw mate-

¹ Figures on "Decade of Expansion" are for the years 1947-1957 inclusive, except where specific reference is made to preliminary data for 1958.



This "Screwball"*
idea is paying off
like crazy!



*T.M. Reg. Hein-Werner Corp.

A SHORT SUCCESS STORY THAT MAY SUGGEST A NEW WAY TO JACK UP YOUR PRODUCTS' SALES APPEAL: You really jack up Sales Appeal when you redesign a product to provide far easier and faster operation with over 20% less weight and at 25% lower cost!

That's just what the Saginaw Screw has done for Hein-Werner's "Screwball"* Jack, compared with hydraulic jacks of equal capacity. Because the nearly frictionless Saginaw Screw converts rotary motion (twirling the crank) into linear motion (lifting the load) with close to 100% efficiency. So maybe you could save a lot of effort, power, weight, space and cost (and get smoother, more dependable performance to boot) in your products . . . just by switching from

inefficient acme screws or costly hydraulics to these extraordinary Saginaw Screws!

We're already building them in sizes from 1½ inches long for delicate electronic controls to 39½ feet long for monster machinery. So if your products (no matter how big or small) use any kind of actuation device, Saginaw Screws may add just the "sizzle" you seek to thrust your sales into higher orbits.

Why not find out right now? Just send us your catalog and our expert engineers will gladly suggest any possible applications without obligation. Saginaw Steering Gear Division of General Motors, Saginaw, Michigan . . . world's largest builders of ball-bearing screws and splines.

Give your products
NEW SALES APPEAL...
switch to the

Saginaw

WORLD'S MOST EFFICIENT ACTUATION DEVICE

ball bearing
Screw

THE MCGRAW-HILL SURVEY OF MODERNIZATION NEEDS

Conducted by the McGraw-Hill
Department of Economics in August, 1958

INDUSTRY:	AGE OF MANUFACTURING CAPACITY Percent Installed			COST TO REPLACE OBSOLETE FACILITIES Millions of \$
	Prior to Dec. 1945	Dec. 1945 to Dec. 1950	Dec. 1950 to Dec. 1957	
Iron and Steel.....	47%	16%	37%	2,855
Nonferrous Metals.....	47	13	40	1,022
Machinery.....	41	21	38	3,224
Electrical Machinery.....	34	18	48	1,917
Autos, Trucks and Parts.....	42	11	47	2,204
Transportation Equipment (aircraft, ships, railroad equipment).....	59	9	32	854
Other Metalworking.....	54	17	29	2,351
Chemicals.....	30	23	47	3,070
Paper and Pulp.....	49	17	34	2,655
Rubber.....	46	9	45	600
Stone, Clay and Glass.....	46	20	34	1,840
Petroleum Refining.....	45	26	29	1,499
Food and Beverages.....	58	19	23	3,443
Textiles.....	59	18	23	1,001
Misc. Manufacturing.....	51	21	28	6,236
ALL MANUFACTURING ¹	48	19	33	34,771

¹ Includes petroleum refinery companies listed under "petroleum industry" in previous table.

rials, by 55%. The distribution and service industries have increased floor space by roughly 50% in the decade. In 1957 alone, business spent \$37 billion on new plants and equipment — more than the combined expenditure in all of Western Europe plus Canada.

But all of this expenditure has not made our facilities as modern as supposed, or as modern as we need. Of the \$291 billion invested by business since 1947, roughly \$157 billion has been for expansion of capacity. Only \$134 billion has been spent to replace old facilities with better, more modern equipment. And in recent years, this investment has not purchased as much new equipment as the dollar figures suggest, because prices of capital goods have climbed.

Our postwar capital investment has repaired the worst of the obsolescence accumulated during the depres-

sion and war years. But huge amounts of old equipment are still in use, as shown by the table above. This is based on a survey of the age of manufacturing capacity in several hundred companies, representing all of the major manufacturing industries. Almost 50% of our present capacity was installed before or during World War II. More than 65% was installed before Korea. Expert studies of the major non-manufacturing industries show that the age of equipment, in those industries, is even greater.

Thus, of all business plant and equipment, less than one-third is modern in the sense of "new" since 1950; two-thirds is pre-Korea.

This over-all figure is confirmed by a check on specific industries:

• Nearly two-thirds of our metal-working equipment was installed over 10 years ago, according to preliminary results of AMERICAN MACHINIST'S 1958 census.

• Over 65% of the freight cars on our railroads are more than 10 years old.

• Less than half the capacity to process chemicals, rubber or petroleum is new since 1950 — a period that has seen rapid development in such equipment as automatic controls for these process industries.

These examples take on a dollars-and-cents meaning when we recognize that the latest machine tools are about 40% more productive than 1948 models, and that a combination of new freight cars and modern freight yard equipment can reduce operating costs up to 50%. New instruments, that automatically direct the flow of a chemical (or other raw material) process, can often reduce processing costs enough to pay back the cost of the instruments in one year. These savings cannot be made in older plants. By using obsolete facilities, our industries accept a waste in labor and materials that totals many billions of dollars per year.

Why Productivity Must Rise

The U.S.A. can ill afford this waste. In the economic struggle between the free world and Communist world, our margin of superiority depends on the efficiency of our productive facilities.

For the growth of our own economy, we shall need a sharp rise in productive efficiency. During the next ten years, American business must provide the goods and services required for a population that will increase by 32 million. And the increased population will expect higher living standards. Furthermore, the population in ten years will include a higher proportion of dependent persons — children and retired people — and a smaller proportion of working age men. Thus, with a relatively smaller labor force, industry must provide more goods for more consumers.

At the same time, industry must strive to hold the line against rising costs. In an economy with a tight



"Trade Mark Service in the Yellow Pages helps us help our dealers!"

says **Robert M. VanBrundt**, Advertising Manager,
Hearing Aid Division, **ZENITH RADIO CORPORATION**

"Zenith's way of converting prospects into customers is as simple as one-two. First, we *spotlight* authorized Zenith dealers through Trade Mark Service in the Yellow Pages of telephone directories throughout the country.

"Secondly, *all* of Zenith's advertising carries the Yellow Pages emblem, to be sure hearing aid prospects turn to the Classified to locate our dealers.

"Even the finest ads can't make a sale

—unless your prospects know *where* to buy. Trade Mark Service, plus the Yellow Pages emblem, does just that for Zenith."

What works for Zenith can work for you. Trade Mark Service in the Yellow Pages can be tailor-made to fit any marketing plan, help any company's advertising pay off *in sales*. Call your Trade Mark Service man at your local telephone company business office.

ZENITH HEARING AIDS

Enjoyed by more people than any other aid in the world. Highest quality, sensibly priced transmitter models include eyeglass type and a tiny aid worn entirely at the ear. By makers of Zenith TV, radios. 10-DAY MONEY-BACK GUARANTEE.



"WHERE TO BUY THEM"

GOOD H B 123 E Kalamazoo.....	IV 7-0124
WALLACE OPTICIANS 223 Abbott rd Elans.....	ED 2-3117
WALLACE OPTICIANS 107 N Washington.....	IV 2-1175

ZENITH'S TRADE-MARK in classified telephone directories ties in dealers with Zenith's advertising, helps them capitalize on the well-known Zenith name.

labor supply, we cannot count on restraint in wage demands, however desirable such a development might be. In the past ten years, hourly wage rates have increased over 5% per year, nearly twice as fast as output per manhour. And this disparity may well continue—causing still more inflation—unless we make more rapid gains in productivity.

We can make these rapid gains — if industry goes all out to modernize its equipment. Output per manhour (in manufacturing) has increased only 2.5% per year since 1951. But this compares with gains of 4% a year in 1947-1950, and over 5% in the 1920s. Today the machines and techniques are available for us to equal, or exceed, these records — to raise output per manhour at least 5% per year. This is a job that can, and indeed must be done, to assure growth in the economy without inflation.

The Job Ahead

The dimensions of this opportunity are shown by the table on the previous page. In its survey on the need for modernization, the McGraw-Hill Department of Economics asked a wide sample of manufacturing companies how much it would cost to replace *all* their out-dated facilities with the best new equipment available. The Department also interviewed experts in each of the non-manufacturing industries, to find answers to this question. The answers add up to a staggering bill for new plant and equipment.

Modernization of over-age facilities — replacing only what is really obsolete, by today's production standards — would require a total capital investment of \$95 billion, or nearly \$20 billion per year for the next 5 years.

Furthermore, new production techniques will soon make *today's* plants obsolete, in many cases. Thus, to keep pace with technical advance *from 1958 on*, will require continuing expenditures of \$8 to \$10 billion per year for modernization.¹

The total expenditure to wipe out the backlog of obsolete facilities, and

keep up with continuing technical advance between now and 1963, would be at least \$135 billion.

The U.S.A. has never spent such a sum on the modernization of industrial facilities. Capital expenditures of boom dimension have, in the past, been associated only with the urgent expansion of capacity. **Some forecasters are now saying that because industrial capacity is adequate, the next few years will be a period of low capital investment.** The figures above make clear that this would be a national calamity. The opportunity is there—and the challenge—to invest record amounts of capital in the modernization of plant and equipment.

A National Problem

This also is a challenge to the U.S.A. as a nation. For 100 years, this nation has been looked to as the model of economic development by the rest of the world. For the first time, we face a serious challenge by another nation and another economic system that claims to be better. In a carefully documented 111 page study released in May, the U.S. State Department declared that "the most serious threat" to the U.S.A. today is the drive for economic supremacy by the Soviet Union.² Although a much smaller nation industrially than the U.S.A., the U.S.S.R. is today increasing its national output at a rate of 7% per year and its output per manhour by 4% per year.

The U.S.A. does not have to match these specific figures, which represent the results of forced labor in a country just starting to develop industrially. In the contest to win uncommitted nations, the statistics are not likely to be quoted exactly, in any case. But our over-all growth in national output and living standards must be so impressive as to leave no question of superiority. Our factories must be showplaces of modernization to the foreign visitor that will leave him unable to say "I saw much better" in Britain, or West Germany, or Russia.

This is the challenge to the nation

—a political challenge to be sure. But it coincides with the challenge to the business community and the individual firm. And the way to meet it is the same: by thorough and rapid modernization of our plant and equipment — not by the slow and steady pace of recent years, but at an accelerated rate that reflects the greater pressure for output at lower cost.

Obstacles To Be Overcome

We must face up to the fact that real obstacles — both technical and financial—stand in the way of faster modernization. Some companies do not have the technical "know-how" required for the latest production techniques. Many more lack the financial resources. How can we overcome such obstacles, and speed up the replacement of old facilities?

In the course of its study, the Department of Economics obtained comments on these questions from many executives. One of the problems, as we noted above, has been the urgent pressure to expand capacity during most of the postwar period. In giving their attention to this problem, companies have sometimes overlooked the chance to modernize older plants.

In some cases, equipment has been kept in place because it was satisfactory, and the users were not aware of still newer designs. Some equipment users believe that equipment makers are not sufficiently aggressive in designing and demonstrating new models.

The biggest obstacle — and one that presents a persistent problem — is the shortage of funds in many companies that need and want to modernize. For all corporations, the cash flow from retained earnings and depreciation has increased by more than \$5 billion from 1953 to 1958. But a number of key indus-

¹This estimate is based on technical developments reported by McGraw-Hill editors and current price trends for capital goods. It is consistent with the plans for modernization expenditures in 1958-61 reported by companies in a McGraw-Hill survey conducted in April, 1958.

²"The Sino-Soviet Economic Offensive in the Less Developed Countries" — U.S. Department of State, May, 1958.

MODERNIZATION PAYS

Profits on modernization—like all business profits—have come down since 1955. However, modernization, in contrast to new capacity, still offers a relatively quick return on investment. Here are companies' answers to the question: "In cases where you are actually replacing old facilities with new plant and equipment in 1958—how soon do you expect these replacement expenditures to pay off?"

PERCENT OF COMPANIES ANSWERING

INDUSTRY:	1 to 2 yrs.	3 to 5 yrs.	6 to 8 yrs.	9 yrs. and over
Iron and Steel.....	11%	56%	11%	22%
Nonferrous Metals.....	29	71	0	0
Machinery.....	12	56	12	20
Electrical Machinery.....	29	57	7	7
Autos, Trucks and Parts.....	40	60	0	0
Transportation Equipment (aircraft, ships, railroad equipment).....	7	53	20	20
Other Metalworking.....	38	33	10	19
Chemicals.....	10	53	21	16
Paper and Pulp.....	22	22	22	34
Rubber.....	33	33	34	0
Stone, Clay and Glass.....	0	57	36	7
Petroleum Refining.....	16	50	17	17
Food and Beverages.....	16	44	12	28
Textiles.....	37	47	5	11
Misc. Manufacturing.....	9	52	13	26
ALL MANUFACTURING*	18	50	14	18

*Note: Answers to a similar question, in a 1955 McGraw-Hill survey, were as follows: 1-2 years: 17%, 3-5 years: 64%, 6-8 years: 11%, 9 years or more: 8%.

tries have failed to keep pace with the general trend. These include some of the areas where the need for modernization is most urgent: the railroads, large sections of the textile industry, some mining industries and many small to medium-size companies in manufacturing generally. The problem of these industries and companies has grown more acute in 1958—since their profits have declined much more than the average for all business.

Any plan to step up the pace of modernization generally must deal with the special situation in these problem areas. Depressed industries and companies need outside help, if they are to modernize. Such help would include a stronger flow of technical information and advice (and occasionally, venture capital) from the more prosperous, inventive industries—as well as advice from

equipment suppliers and distributors, industrial publishers and consultants. There is also a public responsibility to help in the problem areas—not with handouts of government money, but with technical assistance and help in finding private capital (like the efforts now being pursued by the Small Business Administration).

Certainly we should lose no time in reforming those provisions of the federal tax laws that now impede investment in modern equipment by hard-pressed firms—especially the outmoded and unfair restrictions on rates of depreciation for tax purposes. At present, the tax regulations require that depreciation be computed over relatively long periods of "useful life" for most types of equipment. And this is a primary reason for the lag in modernization. Machinery generally

becomes obsolete long before the expiration of its "useful life" as specified in tax regulations. But it is difficult for companies—especially small companies—to set aside cash for rapid replacement, unless the full amount to be set aside is exempt from income tax. Canada and most European nations allow more rapid depreciation for tax purposes than does the United States.

A combination of self-help with technical help, and a fair break from the tax laws, would do much to reverse the spreading tide of obsolescence in depressed industries, and in many small companies.

PLAN '59

It is this combination that McGraw-Hill advocates as "PLAN '59", to help business modernize now for growth and profits. This is what it will take to make a start in 1959 on the \$95 billion job of modernization, disclosed by the study we have just completed:

1. A better flow of technical information on where and how to modernize business plants and equipment.

2. Careful review by the individual company of its own opportunities to modernize at a profit—then action to replace obsolete facilities.

3. Reform of the tax laws, to allow more realistic deductions for depreciation, and permit more companies to finance adequate modernization programs from this source of funds.

Much of this program is already underway. The 34 McGraw-Hill Publications, and many suppliers and distributors of industrial equipment, have stepped up their information programs to start the modernization drive. Preliminary plans of manufacturing companies show a strong emphasis on capital spending for this purpose. In August, Congress passed a bill providing limited tax relief for small business.

But the real task of modernization still lies ahead. It is the greatest challenge, and the greatest opportunity, confronting American business as we move forward into 1959.



1798—first horse to be air-lifted. In Paris, France, Pierre Testu-Brissy went aloft in a balloon, seated on a specially trained horse.

What can Pierre Testu-Brissy teach the chairman of the board ?

It was proved 160 years ago: almost anything can be shipped by air!

Today, America's top executives are taking that lesson one step further.

They are proving that overseas air cargo is a way to build business, increase a company's potential at home and abroad.

Re-examine the *facts*:

Now it is possible to ship by air for less than by sea. Air cargo saves on crating, has no "hidden" charges.

Swift air delivery opens new markets, allows you to reduce inventory and eliminate overseas warehousing.

Air cargo shortens the gap between

manufacture and delivery, smooths out production flow, speeds up payments.

And only Pan American offers the Pan Am Profit Lift—the most comprehensive service of ANY overseas cargo carrier.

For further information, contact your cargo agent, forwarder, or Pan Am.

ONLY THE PAN AM PROFIT LIFT GIVES BOTH SHIPPER AND CONSIGNEE ALL FIVE:

Fastest delivery to all the world. No other airline can match Pan Am's number of *direct* flights to and from all 6 continents of the world.

Fastest reservations. Space can be confirmed electronically in 4 seconds. Reserved or unreserved, all Clipper® Cargo is expedited.

Most experienced air cargo carrier. Pan Am handles 71% more overseas cargo than any other airline. You get expert service all the way!

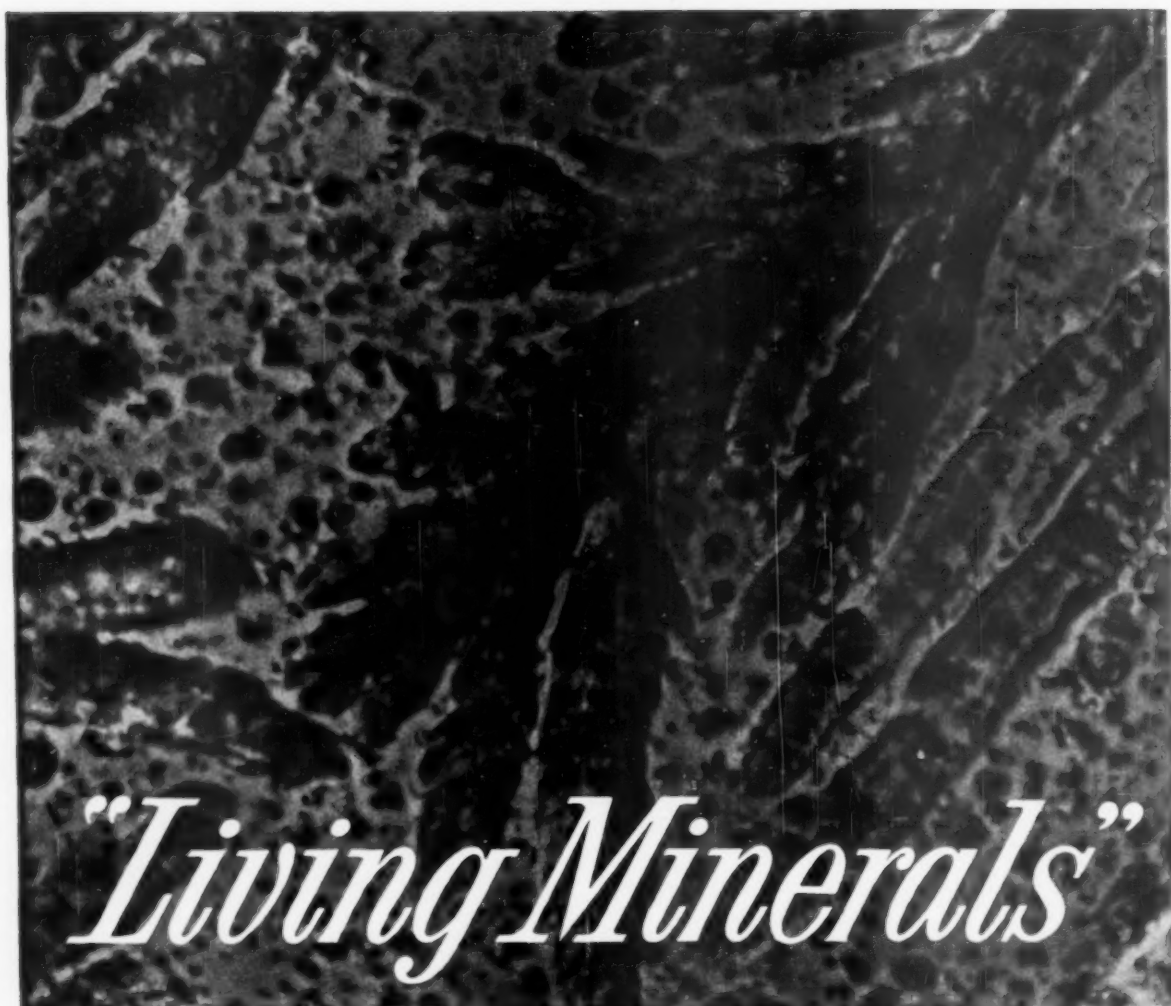
Most modern air fleet. Up-to-the-minute equipment includes pressurized and temperature-controlled planes for even the most "delicate" cargo.

"Doorstep" service from anywhere in the U.S. Just contact your cargo agent, forwarder or nearest Pan American office. Pan Am does the rest.

PAN AM CLIPPER CARGO

FASTEST DELIVERY TO ALL THE WORLD





"Living Minerals"

...source of new products

This glowing crystal is the *Living Mineral*, Nepheline Syenite. You might not expect anything so beautiful to be a basic ingredient for building materials... but it is. Young researchers at International Minerals have made it a vital material for many products such as porcelain insulators, ceramic tile, bath and kitchen fixtures... even glassware!

Our research is helping "dream" products come true daily. We are constantly at work to discover new uses for all our *Living Minerals*... Phosphate, Potash, Feldspar, Bentonites, Mica, Uranium, Fluorides and Barite.

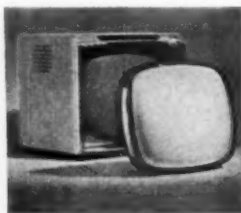
Our living philosophy is to grow by helping industry grow. As a result, all America benefits. May we help *your* company expand?



Glassware



Ceramic Tile



TV Tubes



Administrative Center
Old Orchard Road—Skokie, Illinois

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

INTERNATIONAL OUTLOOK

BUSINESS WEEK

SEPT. 27, 1958



Communist China is playing rough in the Formosa crisis. It's keeping the heat on Nationalist troops on Quemoy (page 166). At the diplomatic level, it's shooting for high stakes—and showing little willingness to compromise.

In Warsaw, Red China opened negotiations by talking tough. With Soviet backing, it demanded nothing less than U. S. abandonment of Formosa as the price for a cease-fire. Washington believes that Peking, in the long run, is aiming for full U. N. membership—despite the U. N. vote this week against seating Red China. That, of course, would be a major diplomatic victory for Peking. It almost automatically would lead to Red Chinese participation in a future summit conference.

Washington is willing to bargain with the Communists—even discuss U. N. membership as part of a settlement. It's under pressure, at home and abroad, to go halfway in meeting any reasonable proposal put forward by Peking. But almost any compromise, such as neutralizing the offshore islands, would undermine the Nationalist position, and create friction between Washington and Chiang Kai-shek.

In any case, Washington thinks a deal with Peking hinges on clear-cut evidence that Red China is really working toward peace. Until that happens, the U. S. will continue its military buildup on Formosa

The Commonwealth Conference just ended at Montreal has been a far cry from the one held in 1932 at Ottawa. This time the Commonwealth has its economic policies pretty well in tune with U. S. foreign economic policies

The world 26 years ago was deep in a depression. The U. S. and Britain had hiked their tariffs in nationalistic moves to sustain their own domestic markets. Then, the Commonwealth group—led by Canada—followed suit at Ottawa with a preferential system that reduced trade with the U. S.

The outlook now is different. Despite the general economic downturn of the past year, the mood at Montreal has been expansionist. Another decade of growth is expected, though perhaps at a slower rate than during 1947-57. Trade policy, so far as the Commonwealth has one, is about evenly balanced between a liberalizing trend in Britain and protectionism in Canada.

The tone at Montreal was set by the upturn in U. S. business—and by the plans the U. S. has for the New Delhi meetings of the World Bank and International Monetary Fund. (These meetings start Oct. 6.)

Out of New Delhi, the U. S. expects agreements to increase the resources of both the World Bank and IMF, and to begin establishing a new World Bank affiliate, the proposed International Development Assn.

These would give the Commonwealth an economic lift in two ways. A strengthened IMF would go on helping sterling over any bumps it may run into. At the same time, the World Bank could pump more development capital into the underdeveloped economies of the Commonwealth

On the basis of Washington's support for a stronger IMF (and London's own relatively strong position today), the British at Montreal promised to:

- Remove by stages the quotas discriminating against dollar goods (U. S. and Canadian).

INTERNATIONAL OUTLOOK (Continued)

BUSINESS WEEK

SEPT. 27, 1958

- **Make sterling convertible** (except for capital transfers) as soon as possible.

- **Provide Commonwealth Assistance Loans**—comparable to our Export-Import Bank loans—to colonies and independent members.

Canada also came through with new promises. It agreed to contribute some \$30-million a year more to underdeveloped countries of the Commonwealth. It also agreed to maintain existing preferences on Canadian imports of British goods that now amount to \$150-million annually.

In fact, Canada made quite a bid to rival Britain as the Commonwealth leader.

—•—

The Administration is preparing a new drive for more foreign economic aid. By January, the foreign-aid kitty will be almost empty.

Eisenhower may ask the new Congress for interim funds. Or the Administration could wait in hope of bigger annual appropriations later in the year. State Dept. officials are talking in terms of \$1-billion yearly over the next five years to help underdeveloped countries.

The Administration will have to get additional financial backing from Congress for the proposed Inter-American Development Bank.

Secy. of State Dulles met this week with Latin American foreign ministers to help launch the bank. Planning is likely to move fast. The main trouble is how to make the bank a joint enterprise—and not just another funnel for financial assistance from the U. S.

—•—

Gen. de Gaulle is almost sure to get French approval for his new constitution in the referendum this week. But that doesn't mean that Frenchmen, at last, are seeing eye to eye. Elections, following the referendum, will be the real test of unity.

Algeria is still France's storm center. The rebels this week set up a government-in-exile to force Paris' hand. And they continued their terrorist campaign in France. Despite all this, Paris believes the rebels are paving the way for negotiations. That's clear from their selection of Ferhat Abbas, a moderate nationalist, as premier of their Cairo-headquartered government.

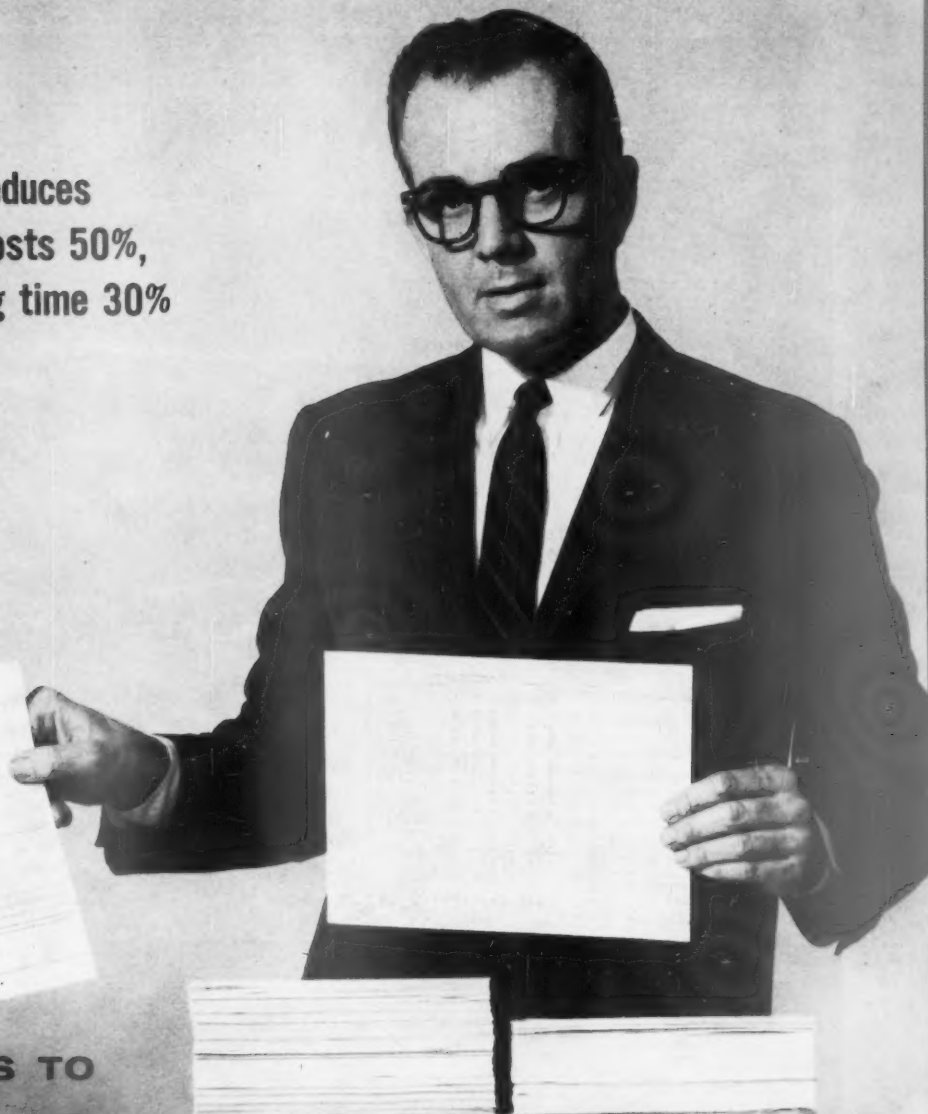
The referendum in France's overseas territories may boomerang on de Gaulle. He told Africans that a "no" vote would bring independence—but halt French economic aid. That put African nationalists on the spot. At midweek, French Guinea and Niger were taking de Gaulle at his word and plumping for independence.

—•—

Trade with the Soviet bloc is a hot issue in Washington. The Western powers decided last month to relax controls on East-West trade. Now the Commerce Dept. is trying to bring U. S. policy in line with the ease-up in trade.

The chemical industry is loaded with rumors about trade deals with the Soviet bloc. But industry executives claim they would block moves to give the Soviets any important chemical knowhow. **Crux of the matter is the specific equipment or process that would be involved in any sales.**

**Westinghouse reduces
report writing costs 50%,
trims duplicating time 30%**



THANKS TO

XEROGRAPHY

■ Westinghouse Electric Corporation, long seeking a fast and economic way to produce progressive financial reports, found the solution in xerography and offset duplicating.

In progressive reports, each month's figures are added in columnar sequence to those of previous months.

Xerography—clean, fast, dry, electrostatic—copies all prior information, thereby eliminating retyping and consequently reducing all typing 50%. Costly preprinted masters are also eliminated as are the preserving, filing, run-

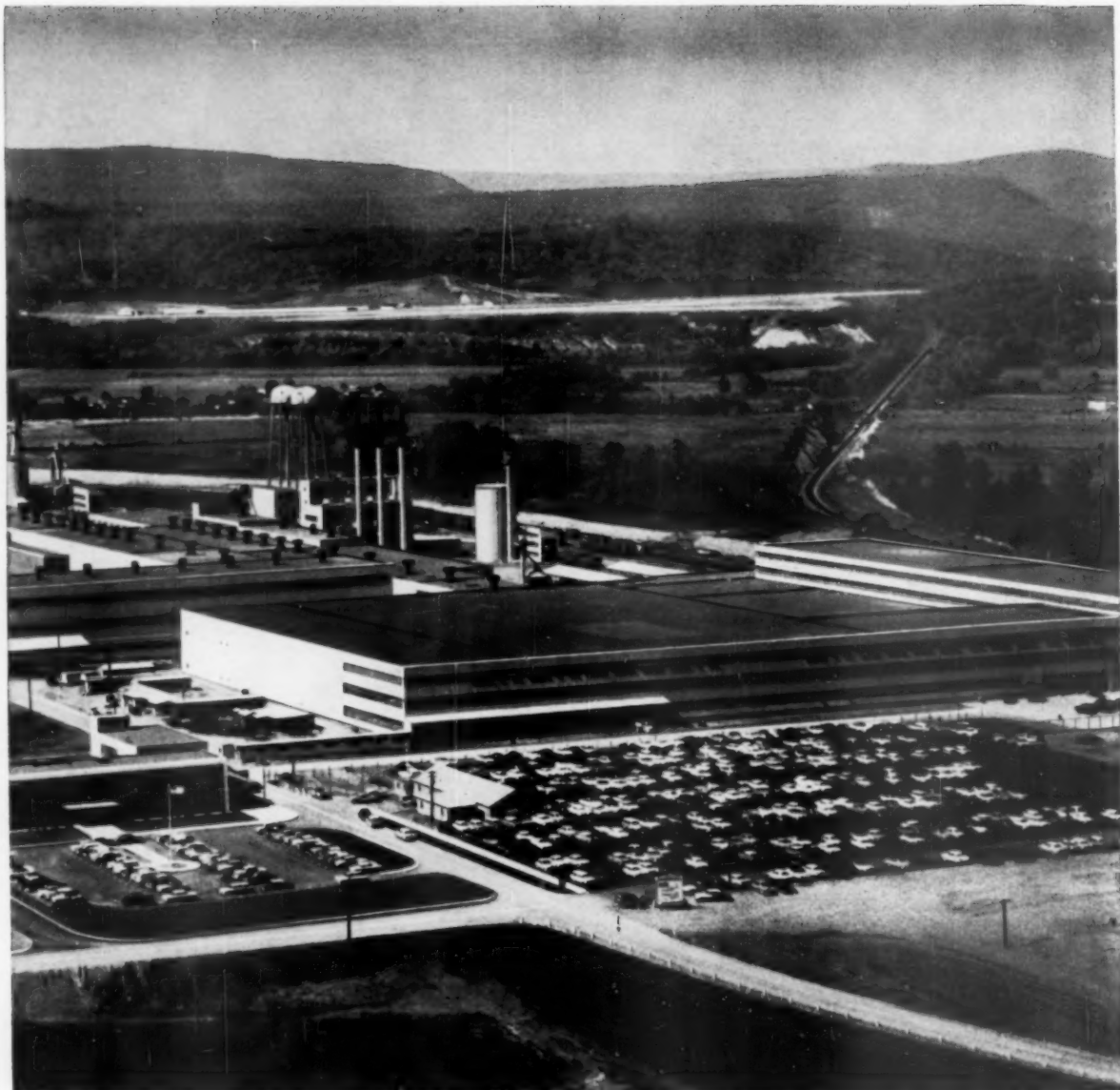
ning down, and reparation of each master for typing. Time saved in duplicating amounts to 30%, making it possible for Westinghouse to meet, and substantially improve, its statement deadline.

Other benefits are the creation of a uniform statement, regardless of the number of typings, and the fact that, without affecting the master, original copy may be easily erased or overlaid with changes for rapid correction.

Write for proof-of-performance folders showing how companies of all kinds

and sizes are saving thousands of dollars yearly and speeding paperwork by xerography. **HALOID XEROX INC.**, 58-19X Haloid St., Rochester 3, N. Y. Branch offices in principal U. S. and Canadian cities.

HALOID XEROX



It's clear to see why Pittsburgh Plate Glass built its new factory on the Western Maryland Railway

You're looking at the new mile-long Cumberland, Maryland facility of the Pittsburgh Plate Glass Company—the industry's most modern plate glass plant.

It produces the finest quality twin-ground, polished plate glass for mirrors and for glazing homes, stores and office buildings.

There are good reasons why this 75-year-old glass maker decided to locate on the lines of Western Maryland: abundant labor . . . a good supply of raw materials . . . access to important markets by practically every mode of modern transportation.

There's another consideration—also clear to see. It's

the prompt, understanding, courteous service that Western Maryland people render—a tradition built during more than a century of pleasant dealings with our customers.



300 St. Paul Place, Baltimore 2, Md.—Short Cut for Fast Freight

The Amazing Auto Contract

- It gives UAW enough to let it claim a victory.
- It adds no cost elements not already in the previous contract, but it gives workers substantially more.
- And many of the most important benefits add no apparent out-of-pocket costs for companies.

As Chrysler and General Motors this week put together new labor agreements with the United Auto Workers on the same financial terms as last week's Ford Motor Co. settlement, it became plain to many people that the auto industry's 1958 economic deal with UAW is in some respects an amazing contract.

It absolutely holds the line against cost increases not included in the expired 1955 contract. Yet it gives the workers substantial raises over the next three years.

And it is a perfect example of how "social gains" once placed in a contract can be enlarged and strengthened for the benefit of the union members but with no apparent out-of-pocket costs to the company.

It therefore gives UAW much of its basic program and enables the union to claim a victory.

• **Mature Documents**—All this comes about because, in one way of speaking, the 1958 auto-union contracts are "mature" documents. There is no pioneering in them, unless you consider the provision for severance pay brand new. What happened was that Ford and UAW built on three well-established principles in previous contracts, one of which is 10 years old.

You can see this as you isolate the main economic features of the Ford-UAW pact.

I. Always More Money

It was in 1948 that General Motors originated, and UAW picked up with glee, the "annual improvement factor" wage increase and the "escalator" adjustment of wages to the Consumer Price Index. At that time, the parties agreed that national productivity could be considered to increase on an average of 2.5% a year and that, therefore, workers should receive an annual increase in base pay to enable their living standards to move up with the economy.

It also was agreed that to take care of short-term fluctuations in prices, workers would get a "bonus" of 1¢ an hour for an upward movement of

prices within a certain range. Contrarily, some of the bonus would be taken away when and if the government's cost-of-living index moved down a specified amount.

Easing gingerly into the new theory of annual productivity raises, GM and UAW at first put the yearly increase in terms of cents-per-hour instead of a percentage of base pay. It was not until 1955 that UAW was able to establish the annual improvement factor raise as 2.5% of base pay or 6¢, whichever was greater. That was a major victory for UAW because it meant that wages would gradually go up a greater amount each year. The same provision is carried forward in the 1958 contract.

Meanwhile, something was added, too, to the escalation procedure. Acting on the premise that the price index isn't likely to fall to a low base point, negotiators decided to transfer 15¢ of the c-of-l "float" to the base wage structure. This actually gives the worker no more money, but it has significant leverage on the annual improvement factor raise.

• **Ford's Deal**—In Ford's contract, the improvement raise will be given retroactively to July 1, and on Aug. 1, 1959, and Sept. 1, 1960. The average hourly base wage on July 1 was \$2.30 per hour. The 2.5% raise on that base is about 6¢. But after that 6¢ and when the 15¢ from the c-of-l float is put in, look what happens on Aug. 1, 1959: The 2.5% of the new base of \$2.51 comes out to 6.27¢. In 1960, on the new base of \$2.57, the improvement factor works out to 6.32¢, to establish a new base of \$2.63. If a new contract in 1961 continues the AIF at 2.5%—and UAW already claims this is too low—the improvement raise would be 7¢.

So, a worker with that average wage of \$2.30 on July 1 would get 18¢ an hour in raises over the next three years. Of course, a considerable number of Ford workers are above that average, so the improvement factor increase generally is considered to be 7¢ rather than 6¢.

On top of that, the Consumer Price Index advanced since the old contract

expired. On June 1, auto workers would normally have been due 2¢ an hour for June, July, and August; another cent would have been due on Sept. 1. Ford, however, negotiated a 2¢-c-of-l hike only for July and August, plus the cent in September. So the company saved 2¢ for each hour employees worked in June. It also saved by pushing back the improvement factor increase a month each year—to August in 1959 and September in 1960.

The effect of the wage negotiations is to give a Ford worker a minimum increase of 21¢ an hour for the next three years, plus c-of-l gains. Skilled workers get an additional 8¢ an hour.

The building process worked just as well on the fringe benefits.

II. A "Little" More

It is on this matter of fringe benefits—or social gains—that UAW Pres. Walter P. Reuther can claim a victory—at no discernible cost to Ford.

The gains came in three areas: supplemental unemployment benefits, pensions, and a severance plan. On SUB, there were a number of technical refinements relating to the procedure by which a worker establishes his claim to benefits, but the big improvements for Reuther's members were these:

• A laid-off worker gets 65% of his take-home pay for all the weeks he is eligible for a benefit. Formerly, he got 65% only for the first four weeks, and 60% thereafter.

• The maximum weekly benefit is increased from \$25 to \$30. The duration of benefits now is up to 39 weeks in states that have provided for that duration for unemployment compensation benefits. Formerly, the maximum duration for SUB benefits was 26 weeks.

• A benefit now can be paid to a person on a short work week. Under the expired plan, a person who worked, say, one day at Ford but picked up enough additional income to be above the minimum that would qualify him for unemployment compensation, could not get a SUB benefit. Now he'll get enough from the SUB fund to bring him up to 65% of his take-home pay.

• **Pension, Pluses**—The pension provisions of the new Ford contract continue the process of getting a "little more." In 1955 pension benefits were negotiated at \$2.25 per month for each year of credited service, for both those retired at that time and for future retirees. The big difference this year is a new schedule:

• Those presently retired get \$2.35

(Advertisement)

The man from Cunningham & Walsh



"The only spokesman an advertiser has in a supermarket is the voice of recall he's planted in the consumer's brain," says C & W's Director of Creative Services, Cal Giegerich. Cal and all our creative and account men spend a week a year at the point of sale to give our advertising a louder voice of recall. Cunningham & Walsh Inc. Offices in: New York • Chicago • Hollywood • San Francisco.



The World's Finest Fish Terminal ~ ~ ~

IS NOW BEING BUILT AT HAVANA . . . THIS WILL MEASURE 415 BY 268 FEET, AND HAVE COMPLETE FACILITIES.

Here nine Frick compressors, producing 500 tons of refrigeration, will supply eight vital services:

- Cooling and icing the fresh fish when graded
- Storing 1 1/4 million pounds of fresh iced fish
- Quick-freezing 100,000 pounds of frozen fish
- Storing 2 million pounds of frozen fish
- Automatically making 20 tons of broken Shell-Ice daily
- Freezing 100 tons of block-ice daily
- Storing 900 tons of block-ice
- Air conditioning the sales, dining, and conference rooms, laboratory and offices.

SEND FOR FOLDER giving complete details of this remarkable Terminal. And specify Frick equipment for that important cooling job of YOURS. Estimates cheerfully furnished: write today to

FRICK CO.
DEPENDABLE REFRIGERATION SINCE 1882
WAYNESBORO, PENNA., U.S.A.

per month for each year they served.

• Those now working get a credit of \$2.40 per month for each year of service prior to Sept. 1, 1958, and a credit of \$2.50 per month for each year of service after Aug. 31, 1958.

You can look at these provisions in two lights: One, they are merely doing what Reuther said must be done—increasing benefits in consideration of inflation. Or, two, the scale for future retirees is taking into account not only inflation, but present and foreseeable wage increases.

• **Prize Package**—The severance plan, of course, is the one that UAW is doing the most crowing about. And, with reason. Few things have caused more discord between the auto industry and the union, and the industry and communities, than the unfortunate fact that some of the industry's plants are ancient and are poorly located for today's markets and so must be abandoned. Because the plants are old, many of their workers have high seniority and are past 50 years old—too old in most cases to get another job when the plant is closed.

To meet this problem, UAW originally made two demands: One, that workers who wanted to move with the work being transferred be given a moving allowance; two, that those who did not want to move be given separation pay. The first demand would, of course, be a precedent-setting thing and the auto industry this year was in no mood to tackle new principles. So Ford and UAW came to grips with the separation pay (which, actually, came near to being included in the 1955 deal).

When a plant is closed (and the severance agreement is retroactive to a Ford plant in Memphis which closed last June and to workers in the Chicago aircraft plant who have been terminated over the past months), separation pay is calculated on a graduated basis beginning with 40 hours' pay for a person with two years' seniority, up to 1,200 hours' pay for a 30-year man.

To be eligible for severance, a person must be laid off for 12 months, but the company can waive this if it believes the worker has no chance to be re-employed.

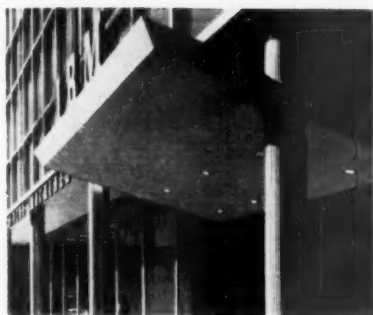
This severance pay is taken from the SUB trust fund, and actually is merely an extension of SUB for a comparatively few high-seniority workers. That's why there is no additional out-of-pocket cost to Ford in this provision.

III. Something For Nothing

Depending on where you want to start to calculate, the "package cost" to Ford of the 1958 settlement is either a little more than 9¢ a year, or nothing. To begin with, there is the



IBM calculates the cost, chooses building materials of Alcoa Aluminum



Building: International Business Machines Corporation, Kansas City, Mo.

Architect: W. B. Fullerton, Kansas City, Mo.

General Contractor: S. Patti Construction Company, Kansas City, Mo.

Aluminum Subcontractor: Benson Manufacturing Company, Kansas City, Mo.

Economy wasn't the only consideration, but it counted strongly in IBM's choice of building materials for its new office in Kansas City. Hence, the widespread use of Alcoa® Aluminum on this modern building, one of several similar new IBM branches in other cities.

Aluminum's natural resistance to weathering and dirt, plus smart good looks, makes it ideal for commercial buildings. The beauty lasts, and expensive maintenance and painting are eliminated. The aluminum curtain walls of stamped panels and extruded frames, column covers and canopy trim in

this case are the work of Benson Manufacturing Company, Kansas City, one of Alcoa's outstanding fabricators.

To find out more about this economical modern building material, call your nearest Alcoa sales office, or write Aluminum Company of America, 1889-J Alcoa Building, Pittsburgh 19, Pa.

Your Guide to the Best in Aluminum Value





How to spot Johnson, Fred R. in 1½ seconds

NEW MOSLER REVO-FILE gives you
personnel facts fast... obsoletes all other card files



No fall out! Exclusive patented Revo-File belt keeps cards perfectly in place, protects against wear.



No attachments! No hole punching! Cards not attached to drum. Just drop your present cards into Revo-File.



No effort! Cards come to clerks with spin of drum. Revo-File available in manual and automatic electric models.

New Mosler Revo-File is the *unique* rotary active-card file. It's the *only* rotary card file that: cuts reference time to 1½ seconds; contains 5 times as many cards as other systems hold in the same space; reduces all finding locations to just one; eliminates changeover costs. Now there's no more tugging, toting, flap-flipping or pulling...Revo-File is *modern*...clerks work while comfortably seated. And remember, one quick spin of the Revo-File drum gives you the card you want...in just 1½ seconds. For further information, send coupon today.

NEW MOSLER REVO-FILE

...the modern rotary card file...another fine product of The Mosler Safe Co., 320 Fifth Ave., N. Y. 1, N. Y.

REVO-FILE DIVISION • THE MOSLER SAFE CO.
Department **BW-958**, 320 Fifth Avenue, New York 1, N. Y.
Gentlemen: I have 2,500 or more cards and—
☐ I am interested in additional information on Mosler Revo-File.
☐ I am interested in a free 30-day office trial of Mosler Revo-File.

NAME _____
POSITION _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

annual improvement factor raise, generally regarded as 7¢. Added to that is the 1¢ c-of-l increase beginning Sept. 1. Because Ford didn't pay the 2¢ c-of-l for June, experts figure that the July-August 2¢ escalation averages out to something more than 1¢ for the year. Similarly, the 8¢-an-hour skilled workers increase figures to 1¢ annually.

But—a big but—the 1955 contract provided for 5¢ into the SUB fund, the same AIF and cost-of-living increase, and 8¢ for skilled workers. So, in the 1958 agreement, Ford is not committing itself to one cent more than it did in 1955—except, of course, for the compounding effect of the 2.5% improvement factor.

That brings out how Ford was able to make UAW happy with the SUB, pension, and severance provisions. At the time the old contract expired in June, the SUB fund had reached its "maximum funding position" due to technical provisions. Ford did not have to continue the nickel-an-hour, although it did so. In effect, the meaning is that the SUB trust fund is over-funded on the old benefit level.

• **Concession**—Back in 1955, UAW argued that the benefit levels were too low, and predicted that the fund would be able to stand heavier raps. Ford experts, of course, disagreed at the bargaining table, while privately conceding that in all likelihood SUB would become over-funded. But it was a completely new plan, with no experience behind it, so the Ford people wanted to be conservative.

Now, with three years—and rough years—of experience behind them, Ford experts can see some "give" in the funding. Meanwhile, the plan has the original safeguards that provide for the level of benefits to be pegged to the size of the trust fund. And, what can't be overlooked in Ford's agreeing to the severance plan based on SUB funds, the severance payments will be reduced in the proportion that the SUB trust fund position falls below 100%.

You find much the same thing in the pension agreement. UAW claimed loudly all during negotiations that the pension funds, due to appreciation and yield on investments since 1955, were well able to absorb higher benefits. But auto companies are not required to: (1) put any certain sum per worker or per hour into the funds, or (2) tell the union more than their total. So UAW never has been able to figure accurately just how much more the funds could pay out.

So, keeping in mind that Ford was dedicated to obtaining a contract that would not increase its costs—and now claims the settlement is "non-excessive"—Ford actuaries must have reckoned that increased pension credits would not hurt the trust fund. **END**



Good approach to cutting inventory costs

*How the
Air Force
proves the
value of
air freight*

Airlifting high valued items reduces stock levels by three months. The Air Force proved it! And on *one item* alone the Air Force reduced procurement expense by \$460,000,000, using the air-lift technique.

Here's dramatic evidence of big scale saving by *planned* use of air freight... how Emery is helping to provide "more Air Force per dollar." And this Air Force experience — that airborne replacement can cut high cost inventories — is applicable to *everyone* in business.

Take a look at your high value items — those over \$3 a pound. Perhaps your company can achieve lower inventory and faster customer service with air freight. Emery will help you reduce inventory by serving any point in the nation in hours... give you twelve to twenty-four hour faster arrival overseas.

Let Emery show you how air freight can boost your profits, cut your costs! Write: Mr. John C. Emery, Jr., Emery Air Marketing Department, 801 Second Avenue, New York 17, N. Y.



EMERY AIR FREIGHT CORPORATION

General Offices: 801 Second Avenue, New York 17. Serving the United States, Alaska, Canada...and Europe, Asia, Africa



How to find cleaner, crisper letterheads

1. THE HARD WAY—Go into the paper mill finishing room. Develop the nimble fingers to fan large sheets so you can spot even tiny blemishes the way specially-trained girls do at Hammermill.

Learn how to make a new pulp from hardwood—as Hammermill did with its exclusive Neutrancel®. Build a \$6,000,000 plant to make the new pulp. Test hundreds of different blends of hard and softwood pulps to make a bond paper that prints better, types better, erases better, looks better. Design a special centrifugal cleaner that whirls specks out of pulp that has already been washed and washed and washed again.

But why go to all the trouble of doing what Hammermill does for you? You can get all these desirable qualities...

2. THE EASY WAY—Ask your printer for

HAMMERMILL
BOND

Choose Hammermill Bond to make a better impression. Printers everywhere use it. Many display this shield. Hammermill Paper Company, Erie, Pa.



In Labor

• • •

Cost of Living: What's Happening to It

	Total Cost of Living	1947-49 = 100			
		Food	Clothing	Housing	
				Total	Rent Only
August, 1950	103.7	103.9	97.1	106.1	109.3
August, 1951	110.9	112.4	106.4	112.6	113.6
August, 1952	114.3	116.6	105.1	114.6	118.2
August, 1953	115.0	114.1	104.3	118.0	125.1
August, 1954	115.0	113.9	103.7	119.2	128.6
August, 1955	114.5	111.2	103.4	120.0	130.5
August, 1956	116.8	113.1	105.5	122.2	133.2
August, 1957	121.0	117.9	106.6	125.7	135.4
September	121.1	117.0	107.3	126.3	135.7
October	121.1	116.4	107.7	126.6	136.0
November	121.6	116.0	107.9	126.8	136.3
December	121.6	116.1	107.6	127.0	136.7
January, 1958	122.3	118.2	106.9	127.1	136.8
February	122.5	118.7	106.8	127.3	137.0
March	123.3	120.8	106.8	127.5	137.1
April	123.5	121.6	106.7	127.7	137.3
May	123.6	121.6	106.7	127.8	137.5
June	123.7	121.6	106.7	127.8	137.7
July	123.9	121.7	106.7	127.7	137.8
August, 1958	123.7	120.7	106.6	127.9	138.1

Data: Dept. of Labor, Bureau of Labor Statistics.

©BUSINESS WEEK

Seasonal Drop in Food Prices Has Stabilizing Effect on Index

The Labor Dept.'s monthly index of living costs dropped in mid-August to 123.7% of average costs in 1947-49—the first decline since August, 1956, and only the second since February of that year. A seasonal drop in food prices was responsible. Other items were stable or higher.

Commissioner Ewan Clague of the Bureau of Labor Statistics said that a continued fall in food prices this month should mean another slight drop in the index, but that "there is no downward trend in sight." About the best that can be expected is a "stabilized" index, a leveling off.

Wages of 125,000 workers under escalator contracts in aircraft, chemical, and other industries are linked with an August cost-of-living index figure. But, at 123.7%, no quarterly adjustment of wages was necessary.

• • •

Arbitrators Ignore Indiana State Law, So Laid-Off Steelworkers Will Get SUB

Steel industry arbitrators have ordered companies to resume paying supplementary unemployment benefits to laid-off Indiana steelworkers, despite a state law barring the supplementation of unemployment compensation.

Under the arbitrators' order, companies are directed to pay a full 65% of wages from SUB reserves until all money that would have been spent in Indiana under an integrated plan—with SUB benefits augmenting public UC checks—is exhausted. During this time, those idle won't draw anything from state funds.

When the SUB money runs out, idle steelworkers will apply for benefits from the state. SUB reserves will be allowed to build up again. Then, idle steelworkers will leave the public UC roll, go back on SUB at 65% of pay.

• • •

Hoffa's Contracts With West Coast Truckers Open Way to Multi-State Negotiations

The Teamsters and West Coast trucking firms last week signed new three-year contracts to end a month-long strike that cost employers an estimated \$1.5-million a day. The agreement, which clears the way for a master contract in 11 states in 1961, strengthens Teamsters' Pres. James R. Hoffa on the West Coast.

Long-haul drivers will get 10¢ hourly raises or a 4¢ increase in mileage pay each year during the three-term contract. One contract will replace 35.

Under separate contracts, short-haul drivers—those on local pickup and delivery trucks—will get a 20¢ raise now. They are promised further increases that will give them wage parity with higher-paid long-haul drivers by May 1, 1960.

Wages of both groups will be adjusted semiannually on a basis of changes in the government's Consumer Price Index. Fringe revisions include a doubling of the employers' 5¢-an-hour pension fund contribution, effective May 1, 1959.

Expiration dates on contracts for long-haul and short-haul drivers were made to coincide. This and the planned equalization of wages are steps toward a master contract for Western drivers. Hoffa's long-term bargaining program calls for regional negotiations on multi-state pacts—and, eventually, national trucking agreements.

• • •

Airlines Agree to a 9% Wage Hike But Machinists Balk at the Terms

Presidential fact-finders last week recommended a 9% wage increase for 20,000 mechanical and maintenance employees of six major airlines. The carriers accepted the recommendation, though they said it would "impose added financial obligations on an industry whose economic well-being is already at stake." The employees' union, the Machinists, balked.

Union leaders said the 9% pay hike and other terms are "far from satisfactory," but would serve as a basis for further negotiations aimed at averting a walkout of ground personnel.

• • •

Industrywide Increase for Lumber Workers

A 7½¢ an hour wage increase has set a pattern for settlements in the Pacific Northwest lumber industry. Rival unions—the Lumber & Sawmill Workers and the International Woodworkers—have accepted the terms, retroactive to Sept. 1.

The first industrywide raise negotiated in three years can be traced to today's stronger market for lumber and plywood.

*Attention
Fleet Managers!*

59



cast

No. 1

Look for more Thunderbird influence in Ford's lineup. Since introducing the 4-passenger T-Bird, Ford production lines have had to go all out to meet demands. Result?

All 59 Fords will have the T-Bird's own flat roof lines, clean sculpturing, neat proportions. In a nutshell—the World's Most Beautifully Proportioned Cars. They've already been awarded the Gold Medal of le Comité Français de l'Elégance for beautiful proportions . . . Brussels World's Fair.

Strong accent on economy: 59 Fords will feature . . .

A new simplified Fordomatic Drive . . . nearly one-third fewer parts. Practically no servicing.

A tougher new aluminized muffler will normally last twice as long.

A superefficient Full-Flow oil filter . . . change oil only every 4,000 miles.

New Diamond Lustre Finish, the most durable finish on any car.

Then, too . . .

New Ford Thunderbird V-8 Engines will give drivers more responsive power where they need it—from 30 to 70 mph.

New Version of Ford's Mileage Maker Six . . . the industry's only modern six. Best information has it that competition is still riding with their old six-cylinder design . . . vintage circa 1930.

All standard Ford engines—Six or Thunderbird V-8—will thrive on regular gas at a savings of up to 5¢ on every gallon.

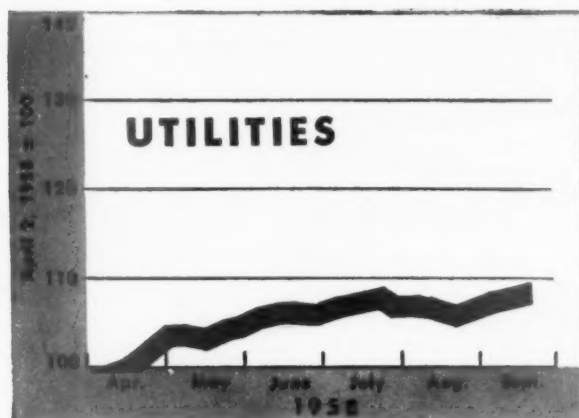
Prediction: Business fleet managers will find Ford's 59 styling, power and economy beautifully proportioned for their needs.

October 17 has been picked as Announcement Day for Ford's new 19-model lineup.

THE MARKETS

In the rush to buy equities, investors are bypassing DEFENSIVE ISSUES — such as the utilities. They are putting new cash into growth and cyclical stocks, which would bound higher in a sharp business recovery

Data: Standard & Poor's Corp.



New Surge to the Growth Stocks

The charts above illustrate a major shift stock buyers have made in recent months. Investors have shied away from defensive issues—which stood up well in the recession because they offered secure yields—and are turning to depressed cyclical and growth stocks that would profit from a vigorous business upturn.

What the charts don't make clear are the more subtle—and more significant—changes in investment thinking that have led to this buying switch. Since over the past year at least Wall Street has looked pretty good as a business forecaster, these new attitudes merit attention by businessmen.

Investors are saying that:

- **Business**—and profit margins—will recover more sharply than most economists believe. Rightly or wrongly, investors feel that not even autos are a question-mark; auto shares are up 26% in the past five months, auto parts, 20.3%, and trucks, 29.3%.

- **Inflation** is the real danger. Investors believe that only by putting money in common stocks can they keep pace with expected deterioration in the dollar. This new faith has pushed stocks to all-time highs (BW—Sept. 20 '58, p31), and so far there is no sign that it has lost its magic.

- The old yardsticks for measuring

stocks are warped. In many cases, investors are discarding traditional price-earnings ratios as guides. Moreover, they are ignoring some of the market's traditional danger signals. In the past, when stock yields fell below bond returns, it meant trouble. Now, faced with the same omen, investors are willing to invest in low-yielding equities, as long as they have a potential for appreciation.

- **Lagging**—All this is evident in the shift away from defensive issues. Utility stocks, which sparked the market early in the year, are losing favor. As measured by Standard & Poor's utility index, they have climbed 8.7% since April, while industrials have risen 15%.

One factor, undoubtedly, is investor fear that utilities could be hurt by the latest squeeze on credit; higher borrowing costs threaten to pare earnings, and thus cut into the handsome yields they pay. Yet actually there is no sign that earnings will fall too sharply, especially since renewed industrial activity should mean more business for the utilities. Essentially, they are being bypassed for the simple reason that a high yield isn't enough for today's inflation-minded investor.

- **Appreciation**—The utilities' performance is typical of defensive stocks in general. None of them has lost much

ground yet, but they no longer pace the averages. That role has been assumed by growth and cyclical stocks that, with generally leaner dividend returns, promise sizable appreciation. Steel stocks have climbed more than 34% since April; rails are up 29%, agricultural machinery stocks are up 36%, chemicals up 17%.

A good many of these stocks are within striking distance of their 1953-57 highs. But there is still lots of room for movement. With an increasing number of institutional investors placing their chips on equities, it's likely that many stocks will top their old highs.

One factor working against the present trend is that new bull markets, historically, bring new investment favorites to the fore. Many of the stocks now getting a rush may lose favor and be replaced by a new crop of stocks. Some professionals argue that this "second stage" of development would be final proof that Wall Street is headed for a full-fledged bull market.

- **Non-Durables**—Which new stocks will join the leaders depends on what sort of boom—if any—is in store for the U.S. economy. Many analysts point to the nondurable industries as a future leader. They stress the change in pattern of consumer spending—away from major appliances, automobiles,

This announcement is neither an offer to sell nor a solicitation of an offer to buy any of these Debentures. The offer is made only by the Prospectus.

\$200,000,000

Standard Oil Company

(an Indiana corporation)

4½% Debentures, due October 1, 1983

Dated October 1, 1958

Due October 1, 1983

Interest payable April 1 and October 1 in Chicago or in New York City

Price 99% and Accrued Interest

Copies of the Prospectus may be obtained in any State from only such of the undersigned as may legally offer these Debentures in compliance with the securities laws of such State.

MORGAN STANLEY & CO.

**KUHN, LOEB & CO. THE FIRST BOSTON CORPORATION GLORE, FORGAN & CO.
BLYTH & CO., INC. DREXEL & CO. EASTMAN DILLON, UNION SECURITIES & CO.
GOLDMAN, SACHS & CO. HARRIMAN RIPLEY & CO. KIDDER, PEABODY & CO.
LAZARD FRERES & CO. Incorporated LEHMAN BROTHERS
MERRILL LYNCH, PIERCE, FENNER & SMITH SALOMON BROS. & HUTZLER
SMITH, BARNEY & CO. STONE & WEBSTER SECURITIES CORPORATION
WHITE, WELD & CO. DEAN WITTER & CO.**

September 18, 1958.

This advertisement is neither an offer to sell nor a solicitation of an offer to buy any of these securities. The offering is made only by the Prospectus. This is published on behalf of only such of the undersigned as are qualified to act as dealers in securities in the respective States.

New Issue

September 16, 1958

\$50,000,000

Tennessee Gas Transmission Company

First Mortgage Pipe Line Bonds, 5¾% Series due 1979

Dated September 1, 1958

Due January 1, 1979

Price 100%

and interest accrued from September 1, 1958 to date of delivery

Copies of the Prospectus may be obtained from any of the undersigned who are qualified to act as dealers in the respective States.

**Stone & Webster Securities Corporation White, Weld & Co. Halsey, Stuart & Co. Inc.
Blyth & Co., Inc. Eastman Dillon, Union Securities & Co. The First Boston Corporation
Glore, Forgan & Co. Goldman, Sachs & Co. Harriman Ripley & Co.
Kidder, Peabody & Co. Incorporated Lazard Frères & Co. Lehman Brothers
Merrill Lynch, Pierce, Fenner & Smith Paine, Webber, Jackson & Curtis
Salomon Bros. & Hutzler Smith, Barney & Co. Dean Witter & Co.**

and consumer durables, and toward soft-goods and semi-luxury items.

• **Watching the Chemicals**—The great fear is that the present passion for common stocks will go too far. Many an analyst—whether he has money in the market or not—worries lest the elevated status of equities start prices off on an uncontrollable tear. Then, if earnings didn't live up to their promise, there could be a major market decline.

Professional money managers are watching a few key stock groups to see whether the present mania for growth stocks as such gets out of hand. One group is the chemicals, a fine example of a growth industry that could climb its way into trouble.

During the second half of 1957, prices of chemical shares fell sharply, reflecting the decline in industrial activity. But this summer, prices rebounded a healthy 17% as sales volume and profit margins perked up. Most chemical companies have put on drives to cut costs, and this, together with renewed business, should improve their earnings and profit margins in the coming months.

Despite this, the big question is how investors will react from here on. For there is no sign that the improvement in earnings will be explosive.

For one thing, the industry faces over-capacity in some basic chemical items. The problem has been obscured somewhat in past years by sales increases, but now it has been heightened by the recession and a continued thinning of profit margins.

As they emerge from the recession, some chemical companies find themselves in better shape than during 1957. They have pared down much of their costs, and they diversified their product mix, thus opening new markets. But many are completing heavy capital programs, and they are confronted not only with high start-up costs, but with the rugged task of operating new facilities at a time when the industry is running way below capacity.

This had led to stiff competition, and price weaknesses already are showing up in many fields—urea, for instance. More than one company has plans for opening new plants in fields where production is now in balance. Thus Standard Oil Co. (New Jersey), says it will enter the plastics field.

Without some internal improvements, profit margins in the future could dwindle, rather than blossom, for growth companies in many fields besides the chemicals.

Just as many growth companies may not turn out to be inflation hedges, so, too, the now-favored cyclical stocks may fall from grace. Many of these companies suffer from the same basic over-capacity problems of some growth



Who's the old hand in inertial navigation?

Self-guided missiles are stage front now. Missiles with their destiny and destination sealed in at departure; missiles that are unaffected by radio, radar, sunspots, weather or any other remote influence; missiles bearing inertial navigation systems.

Developing, designing and manufacturing these rugged but incredibly delicate systems are all **ARMA** spe-

cialties. Right now, **ARMA** is developing one of the systems for the new Air Force ICBM—Titan. Tomorrow, an **ARMA** system may be at the controls of the space craft that whisks you off to a lunar vacation.

ARMA can be at the controls for

you right now as well, if you're seeking guidance in problems that involve electronic or electro-mechanical engineering of the highest order.

ARMA... Garden City, New York.
A Division of American Bosch Arma Corporation.

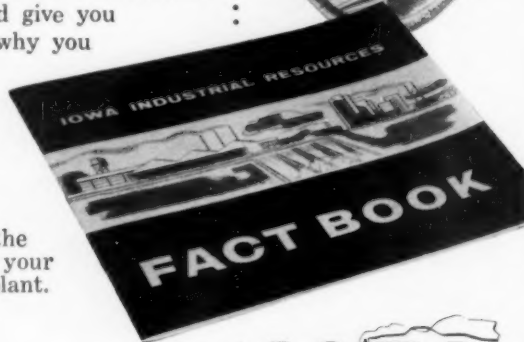
5602

AMERICAN BOSCH ARMA CORPORATION

Let us send it to Grandma

Just have her write us and ask for our IOWA INDUSTRIAL RESOURCES FACT BOOK. Nothing could be more confidential and nothing could give you a better idea of why you

should consider the NEW IOWA for your new or branch plant.



IOWA DEVELOPMENT COMMISSION
300 Jewett Building, Des Moines, Iowa



companies. What's more their markets are more static.

• **Copper's Posture**—Take copper. For the past year, copper shares have been in the doldrums. But lately, with prices up slightly, they have taken a turn for the better, climbed 16.4% since April. Yet despite the improved inventory position of fabricators, the industry is still plagued by over-production. Unless there is a major boom in durable goods, the industry will have a tough time showing good profits—particularly since its arch rival, aluminum, is constantly cutting into its markets in many fields.

The tire and rubber industry has the same uncertain long-term prospects, though its shares are up 13% from their year's low. Unless there is a boom in autos, the earnings of the tire and rubber companies are not expected to be rosy. History supports this view. The combined sales of the four largest rubber companies rose by only 17% in the five years through 1957, while their combined net earnings fell by 1%.

One point in the industry's favor, however, is its new activity in missiles. This could stimulate growth—and profits—at a much faster pace than originally expected.

Gilbert Emerges on Top In Fight for E. L. Bruce

The prolonged battle for control of E. L. Bruce Co. (BW—Sep. 13 '58, p91) ended this week in a hotel room in New York's Waldorf-Astoria. The winner, despite public pronouncements of an "amicable settlement," was Edward M. Gilbert, 34-year-old director of Empire Millwork Corp.

Gilbert, who maintains he has more than 50% of Bruce's 314,600 common shares, will become chairman of a new executive committee, which will function between meetings of the directors. The settlement also provides for equal representation for Gilbert and the Bruce family on the 14-man board. C. Arthur Bruce remains as chairman of the Memphis flooring company and E. L. Bruce, Jr., as president.

Gilbert's attorneys parried questions as to whether there would be a merger between Empire Millwork and Bruce. But rumors of such a merger persist.

The settlement was good news for short sellers of Bruce stock, who had been trapped in a neutral corner since the beginning of the summer. This week the price of Bruce shares dropped to \$36 per share, some \$100 below the asking price of a few weeks ago. The stock was selling at \$17 in March, when it started to rise under the buying pressure from Gilbert. **END**

This announcement is not an offer of securities for sale or a solicitation of an offer to buy securities.

New Issue

September 18, 1958

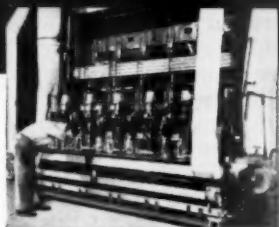
American-South African Investment Company, Limited

1,200,000 Common Shares
£1 (South African) Nominal Value

Price to Public: \$28 per share

Copies of the prospectus may be obtained from the undersigned (one of the undersigned named therein) only by persons to whom the undersigned may legally offer these securities under applicable securities laws.

Dillon, Read & Co. Inc.



Glass plants obtain wide range of production at high speeds on forming machines made by our Hartford-Empire Division.

COMPLEX GLASS PROCESS COMPLETE FROM EMHART

Emhart's Hartford-Empire Division, the world's foremost supplier of glass-making equipment and services, covers the manifold aspects of manufacturing glass containers. This is the only organization offering the glass industry everything from technical services in batch formulation to automatic inspection of the finished product.

Other examples of Emhart equipment, shown below, indicate still further the diversity of problems this company solves. "EMHART—its people and products" is a brochure describing our scope. Please write for it.



EMHART

EMHART MANUFACTURING COMPANY, HARTFORD 2, CONN.
EMHART EXPORT COMPANY, HARTFORD AB SUNDSVALLS VERKSTADER, SWEDEN
EMHART SWEDEN AB, STOCKHOLM EMHART INTERNATIONAL, S.A., PANAMA



Emhart noise suppressors add a quieting plus to efficiency
MAXIM SILENCER COMPANY,



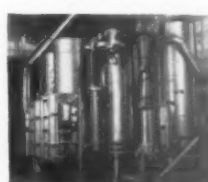
Emhart packaging machinery automates production lines
STANDARD-KNAPP DIVISION



Emhart Skyworkers raise men to new levels of efficiency
SKYWORKER DIVISION



Emhart press feeders greatly reduce accidents and costs
V & O PRESS DIVISION



Emhart distillation units convert sea water to fresh water
MAXIM SILENCER COMPANY

In the Markets

• • •

Anderson Asks Institutions to Buy Bonds As Patriotic Blow Against Inflation

Faced with a huge financing problem, Secy. of Treasury Robert B. Anderson called on the "entire financial community" this week to "cooperate" in maintaining a healthy government bond market. Speaking before the annual convention of the American Bankers Assn. Anderson said that private investment institutions—savings institutions, insurance companies, pension funds—must provide "aggressive assistance" for the Treasury.

This new patriotic response is necessary, Anderson said, to spare the Treasury from borrowing from commercial banks, which would mean "increased bank credit and inflationary pressures." In his view, placing Treasury securities in the hands of permanent and private institutional investors will moderate "speculative activity" in the market.

Anderson admitted that institutional investors have shied away from the government bond market because of the losses they suffered during the summer debacle in bonds. But he feels that institutional investors should buy governments, even if they don't provide good yields. "They must look," he said, "not only to the immediate consequences of their actions but to the ultimate economic consequences as well."

Bankers and investment men at the ABA meeting doubted that Anderson's patriotic appeal would bring a shift back to governments. As one banker put it: "You can't expect institutional investors to take losses just to bail out the Treasury."

• • •

SEC Investigates Brokers' Conduct, Seeks Injunction in Arvida Case

The Securities & Exchange Commission acted with unusual vigor this week against two big Wall Street brokerage houses involved in the proposed public offering of stock by Arvida Corp., which is being formed to take over Arthur Vining Davis' Florida land holdings (page 69).

SEC first moved to get an injunction against issuance of the stock. This action has bogged down in the courts, but it is scheduled to be argued next Tuesday. SEC also is investigating conduct of the two brokerage houses—Carl M. Loeb, Rhoades & Co. and Dominick & Dominick—to determine if their broker-dealer registrations should be revoked. Revocation, putting the firms out of business, is considered highly unlikely, however.

SEC said Loeb, Rhoades and Dominick & Dominick had violated the Securities Act of 1933 by initiating what amounted to a sales campaign before filing a preliminary registration with the commission. The two firms held a news conference last week to announce the Arvida issue. As one SEC spokesman sees it, "The

press conference looks like a direct challenge to the commission's authority."

"We believe the announcement concerning the coming issue of Arvida was proper and in the public interest and was in no way in violation of the law," said the firms. "The matter is now pending in the U.S. courts, and we are confident that our position will in due course be vindicated."

SEC has been increasingly touchy about advance publicity since Ford stock was sold publicly two years ago. Then, public excitement drove Ford's offering price up to \$64.50 per share; later, the stock dropped almost 20 points.

In another move, SEC backed up its blacklisting of Canadian Javelin, Ltd., stock (BW—Aug. 2'58, p73) by a court action for an injunction barring John C. Doyle, Javelin's president, and others from repeating alleged violations of the Securities Act.

It's expected, however, that this is essentially the first step in a settlement between Doyle and SEC. Some observers say Javelin will plead no contest—which neither admits nor denies the charges. By then filing an SEC registration statement, Javelin would satisfy one of the SEC's biggest gripes against the company.

• • •

Stocks Break Through to New Highs, But They Show Signs of Slowing

The stock market moved to new historic highs again this week, but, like a man after a spree, it was puffing a bit. And a few analysts commented that prices appear to be losing some of the momentum that carried them past the 520 barrier on the Dow-Jones industrial average.

Support for this theory comes from two factors. For one thing, the market is once again becoming more sensitive to dividend cuts. When the Reading RR passed its dividend this week, the stock reacted downward sharply—even though the market lately has bid up the rail stocks on the grounds that they were greatly overdiscounted on the downswing.

Analysts also point out that much of the market's current rise is coming from a few key issues: American Tel & Tel, Eastman Kodak, Chrysler, and du Pont. But the consensus still is that prices will bound higher after this breathing spell.

• • •

The Markets Briefs

The Grace Line will publicly sell \$9-million of government-backed merchant marine bonds early in October. This is the first such issue, and Moody's rates it Aaa, calling it "a prime new investment security."

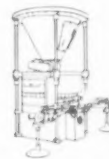
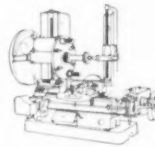
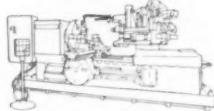
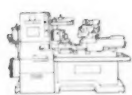
The New York Mercantile Exchange, one of the oldest commodity exchanges in the country, is playing around with a new idea for solving its basic problem of too little business. It expressed interest in initiating a third stock exchange in New York, primarily to trade in the huge volume of securities not listed on either the New York Stock Exchange or the American Stock Exchange.



it's multiplication by subtraction!

The formula is simple: *Take away* up to 5 hand or old automatic turret lathes. Replace them with just *one* new Potter & Johnston Automatic. And you'll *multiply* your productive efficiency many times.

Time and again, this formula has been *proved* by facts like these: A single P&J Automatic with one operator now handles work that previously required five hand machines and five operators. In another plant, production was multiplied 3.5 times by switching from hand machines to a P&J Automatic. And in a Texas plant, two of our Automatics operated by one man have replaced seven hand machines and released six operators for other work. Get *all* the facts in these and other success stories. See how a switch to P&J Automatics can multiply savings and profits on *your* production lines! Write now for copies of P&J Case History Reports, Potter & Johnston Company, Pawtucket, Rhode Island.



AUTOMATIC TURRET LATHES . . . GEAR CUTTERS . . . PACKAGING MACHINES



POTTER & JOHNSTON

SUBSIDIARY OF PRATT & WHITNEY COMPANY, INC.

PRECISION PRODUCTION TOOLING SINCE 1898

the men of SHARONSTEEL...they make quality a tradition



PHOTOGRAPH BY KARSH OF OTTAWA

From his pulpit Fred Dresch preaches tolerance

• Fred not only talks tolerance, but from his pulpit, or control station of a modern Sendzimir Mill, he cold rolls strip steel to extra fine dimensions for those customers who require material of exacting specifications. He is one of a team of experienced rollers who work with the industry's most modern equipment to assure users of the highest quality possible when they specify Sharon Steels.

234

SHARONSTEEL

*For 56 Years
a Quality Name
in Steel*

SHARON STEEL CORPORATION, SHARON, PA.

PERSONAL BUSINESS

BUSINESS WEEK
SEPT. 27, 1958

A BUSINESS WEEK

SERVICE

Take a searching look at the new tax laws designed to benefit small business. It might well provide you with new investment opportunities or ways to save some tax dollars.

The fact is, the experts are just now pouring over the small print in this legislation—and finding out just what the provisions permit.

Three of these tax changes, particularly, are well worth talking over with your tax adviser—one having to do with investing in small business, another related to corporation vs. partnership tax reporting, and a third that gives a break to heirs of a small business on estate taxes.

Small business losses. The new law allowing ordinary loss deductions for losses on "small business stock" fully lives up to its aim—to encourage investors to put money into small enterprises.

If you make such an investment and it goes sour, you get a fully deductible loss offsetting ordinary income, up to \$25,000, or \$50,000 on a joint return—compared with the standard \$1,000 limit on capital losses. And you get this whether you incur the loss upon sale of your interest, or simply when the stock becomes worthless.

Any loss on the investment in excess of these limits can be used to offset capital gains, and can be carried over for five years.

The question is, what type of security qualifies as "small business stock?" Basically, the issue must meet these tests:

(1) The plan for issue must have been adopted after June 30, 1958, and the stock must be issued within a span of two years.

(2) The company must issue not more than \$500,000 worth of this stock, and the total equity may then not exceed \$1-million.

(3) The company must have "substantial" income from normal business operations. (Generally, a company with income primarily from rents, dividends, interest, annuities, royalties, or capital gains from security sales may not issue "small business stock.")

Tax reporting. Small corporations—up to 10 stockholders—may now elect to be taxed like partnerships. This means you can now enjoy the legal protection of a corporate setup, with limited personal liability, but still gain the following advantages:

- **The double tax on profits is avoided.** Having once paid your personal income tax on undistributed earnings, you pay no additional tax at the time of distribution. (However, as a "partner," you lose out on any "dividend received credit" or exclusion.)
- **If your personal income tax bracket is lower than the corporation's bracket, you can save taxes by having your business income taxed at your lower personal rate.**
- **If the corporation suffers losses, you can offset these against your personal income.**

For this, there are two major requirements: (1) The corporation may have but one class of stock; (2) to accomplish the election, there must be the unanimous consent of all shareholders.

Spreading estate taxes. The new law that gives the heirs of a small business the right to spread estate taxes over a period of 10 years might prove a boon to you some day—conceivably it could eliminate the chance of having to sell an inherited business to raise lump-sum tax funds.

PERSONAL BUSINESS (Continued)

BUSINESS WEEK

SEPT. 27, 1958

The inherited estates that qualify for this relief are (1) Sole proprietorships, (2) partnership interests representing 20% or more of the total capital of the company, (3) any partnership interest where there are 10 or fewer partners, (4) any corporate interest representing 20% or more of the value of the voting stock, and (5) any corporate interest where there are 10 or fewer stockholders. In addition, the business interest inherited must amount to at least 35% of the gross estate (before taxes), or 50% of the taxable estate.

If these tests are met, the entire estate tax can be spread over the 10-year period. One obvious drawback: you will pay the government an interest charge of 4% on the declining balance.

Grace note: Refund claims for deductible educational expenditures made in 1954 now can be filed until Nov. 3 on Form 843 or on an amended return on Form 1040 for that year (BW—May24'58,p129). This extension goes back beyond the standard three-year limit on amended returns. So, if you didn't make the original Apr. 15 deadline this year because the ruling came so late, you have a second chance under a new special rule.

Also, if you made such a claim last spring, too late for consideration, you can ask your IRS district director to reconsider the matter. And, of course, you can still file amended returns for 1955, 1956, and 1957.

Want to tinker with something really different? You can buy "The Surrey," a 1958 version of a vintage 1903 automobile, in knocked-down kit form. The auto has a top speed of 35 mph. and is powered by a 4.8-hp. engine. It comes complete with tiller instead of steering wheel and with such nostalgic equipment as polished brass headlights, bulb horn, and wooden spoke wheels. For the do-it-yourselfer, the cost is \$895; already assembled, \$1,095 (Dyer Products Co., Canton, Ohio.)

Here's what you'll find on the new car labels under the provisions of a law effective Oct. 1 (BW—Sep.20'58,p33): (1) make, model, and serial number; (2) final assembly points or port of entry for imports; (3) name and address of dealer to whom car was delivered; (4) where delivery was made if different than dealer's regular place of business; (5) method of transportation for delivery; and (6) suggested retail price for car and factory-installed options and accessories plus transportation charges to delivery point; also, total of such prices and charges.

While the suggested retail prices are affixed either to the windshield or side windows, keep in mind that the price tag does not hold the dealer to the price given. There's still room for bargaining.

Start packing: Moore-McCormack's new **Brasil**, now on her maiden voyage to South America, has all first-class accommodations (including four de luxe suites) and five passenger decks . . . **Family-plan discounts on transatlantic flights** will be in effect from Oct. 15 through Mar. 31. On first-class plane travel, the passenger family fare reduction is \$150 one way and \$300 round trip. The new economy-class family plan can cut \$100 from one-way fares and \$150 from round-trip tickets.



Frozen dinners, ready to heat-and-eat, now come in pouches made of MYLAR® polyester film coated with ALATHON® polyethylene resin. Coating by Shellmar-Betner Division of Continental Can Co., Mt. Vernon, Ohio, and Standard Packaging Corp., Clifton, N. J.

FREEZE IT...HEAT IT...EAT IT...

made possible with a coating of Du Pont **ALATHON®**
POLYETHYLENE RESIN

If you've been searching for a coating material that can really "take it," look again at the picture above. That pouch of pot roast, by the John Morrell Co., General Offices, Chicago, has been cooking in boiling water for 15 minutes. And before that it was frozen solid!

Because it's coated with a Du Pont

ALATHON, the pouch has a heat seal which will not break down, even under extremes of temperature. The package protects contents against dehydration and freezer burn . . . keeps moisture and air on the outside. ALATHON also resists oils, greases, acids and alkalies. Odorless, tasteless and non-toxic, it cannot harm

the most delicate foods.

These are qualities which make ALATHON attractive to food packagers. It has additional qualities which are being used to great advantage in other fields, as well. If you would like further information on the Du Pont family of ALATHON polyethylene resins, send coupon.

POLYCHEMICALS DEPARTMENT



BETTER THINGS FOR BETTER LIVING
... THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department
Room 6927, Du Pont Building, Wilmington 98, Delaware
In Canada: Du Pont Company of Canada (1956) Limited, P.O. Box 660, Montreal, Quebec

Name _____
Firm Name _____
Position _____
Type of Business _____
Street Address _____
City _____ State _____

S.S. White
FLEXIBLE
SHAFTS
HELP MAKE
BETTER
PRODUCTS...

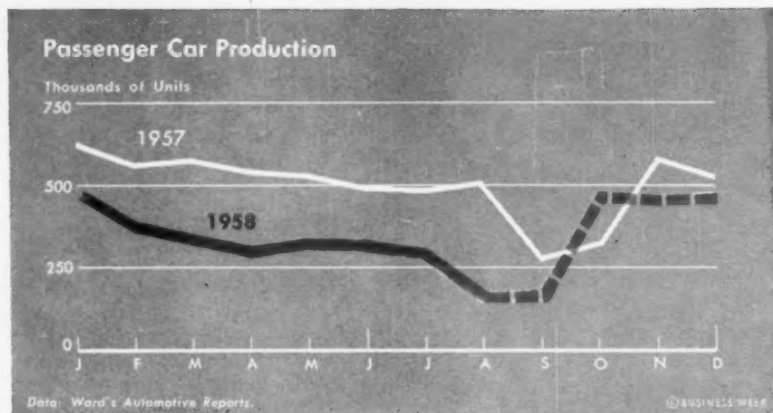


Efficient, streamlined *simplicity* is just one of the important "betterments" you achieve when you use S.S. WHITE FLEXIBLE SHAFTS for remote control or power drive. FLEXIBLE SHAFTS are simpler to order . . . simpler than assembling a complicated control system that involves a lot of parts . . . simpler to incorporate in your design . . . work like a charm in your product. S.S. WHITE offers a complete line of standard shafts, pre-engineered assemblies, custom-engineered assemblies — in fact, S.S. WHITE makes the *entire assembly* from coupling to coupling. If you transmit power drive or remote control in your product, it will pay you to *simplify and economize* with S.S. WHITE FLEXIBLE SHAFTS. Just drop us a line for complete information. Dept. 15.

S.S. White
IN FLEXIBLE SHAFTS

S.S. WHITE INDUSTRIAL DIVISION
10 East 40th Street, New York 16, N. Y.
Western Office:
1839 West Pico Blvd., Los Angeles 6, Calif.

CHARTS OF THE WEEK

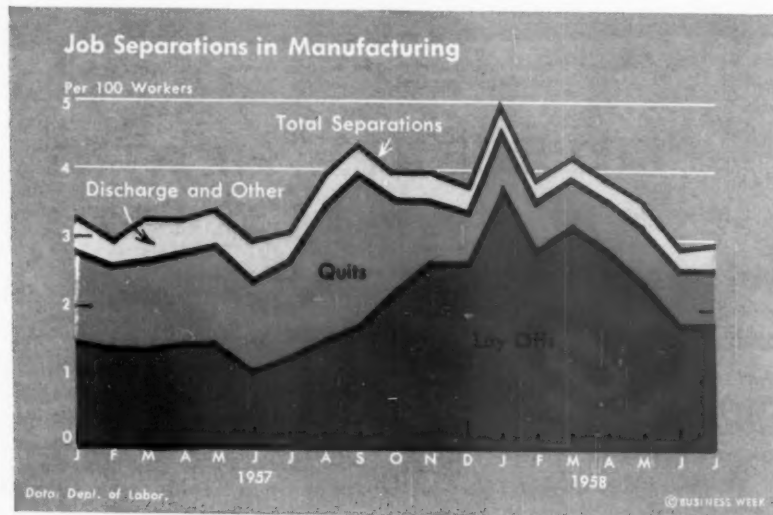


Detroit's Hopes on Upswing

Auto makers are planning a strong comeback in car production in this year's fourth quarter, according to Ward's Automotive Reports. They will turn out almost 1.5-million cars in the coming three-month period, if the public receives the 1959 models favorably. Such a pace would be the fourth highest on record, surpassed only in 1950, 1955, and 1956. It would follow a poor third quarter in which fewer than 700,000 cars were produced, for the

lowest July-September total since World War II.

By meeting its fourth quarter schedule, Detroit will boost its 1958 production to 4.4-million cars. The only other year since 1948 that auto output has failed to top 5-million units was in 1952 when 4.3-million cars were produced. This year's output goal is roughly 28% under the 6.1-million cars produced last year and 45% below the 1955 record of 7.9-million cars.



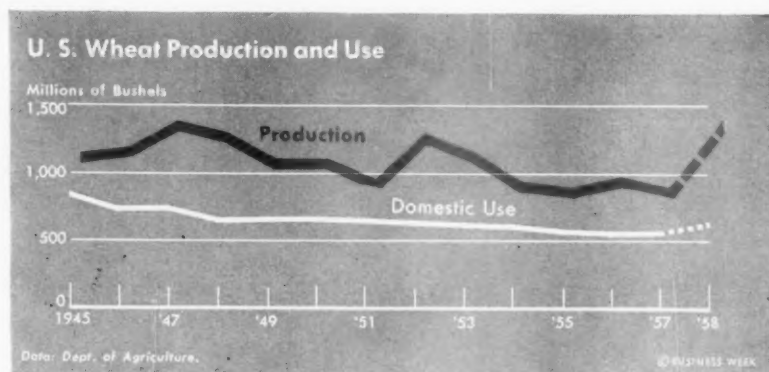
Layoff Rate Slows Down

Layoffs, the dominant feature in labor turnover rates in manufacturing during the 1957-58 recession, have eased up considerably. The rate of layoffs per hundred workers, which climbed steadily from 1.3 last July to

3.8 in January, dropped back to 1.8 in June and July. The mass layoffs during the recession, plus a much reduced rate of hiring, have lowered manufacturing employment to a level of about 1.5-million below a year ago.

The recession also has had a sharp effect on the number of workers quitting their jobs—the rate per hundred

workers declined to .8, or roughly half that prevailing in 1955 and 1956. Discharges also dropped markedly.

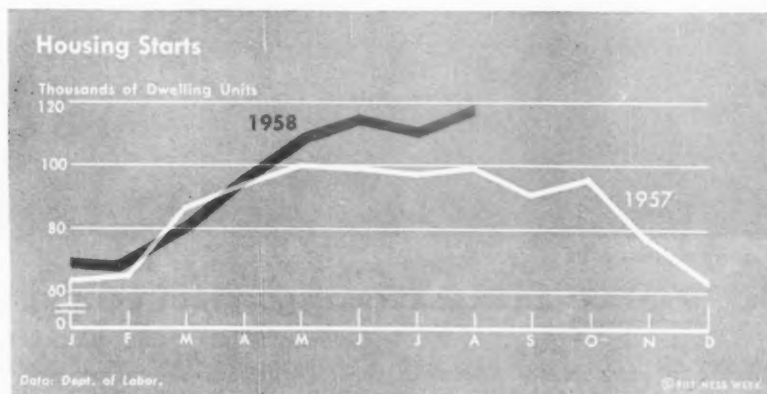


Record Crop Means Record Glut

Almost ideal growing weather this year has presented farmers with a record wheat crop estimated at close to 1.5-billion bu. This year's estimated yield at 27 bu. per acre, also is a record; the postwar average is 17.7 bu.

The current bumper crop is 30% larger than normal, and complicates the chronic surplus problem. The July 1 carryover now stands at 881-million bu.

With a domestic use expected to require only about 610-million bu. and exports another 400-million, the Agriculture Dept. foresees a record surplus of about 1.3-billion bu. One of the reasons for the growing surplus is the fact that output in the U.S. remains high despite production curbs, while per capita consumption of wheat products is falling steadily.



Homebuilding Continues Strong

Residential building is expected to remain high throughout the remainder of the year as the revival of housing starts that began in spring continues to gather strength.

The chief stimulant to private housing construction this year has been the easier availability of mortgage funds and the more liberal terms offered under the FHA program. Home starts under FHA inspection through July were up 71% over 1957, while those

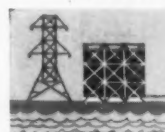
under VA inspection were down more than 50%.

Public housing construction, chiefly military housing, is more than 40% above the 1957 rate, but still comprises only 6.6% of total starts.

The surge in housing has stimulated sales of building materials and some appliances. It also helped bolster employment, but chiefly in areas where the recession has been less severe and housing demand has remained firm.

*Plentiful
and Low Cost
UTILITIES*

in industrial
LONG BEACH,
Southern California



Power rates are among the lowest in the nation, with plentiful production from hydro and steam generating plants. Low-cost natural gas is supplied from municipally-owned fields and pipe-line imports. Water comes from City-owned wells and the Metropolitan Water District (Colorado River water) at most favorable rates. These utility advantages all add up on the profit side of your ledger.

**INDUSTRY BENEFITS
from a Better Harbor**

**America's
Most
Modern
Port**



These same utilities — where needed — are available to shippers at the Port of Long Beach, plus the Port's many other advantages. For example, machines do the heavy work of lifting and moving cargoes. Ship booms, fork lifts, trailer train conveyors, and the great bulk-loader speed shipments, saving time and money.

The low-cost utilities and the Port of Long Beach are some of the 12 outstanding advantages Long Beach offers to industry.

Send for these!

Long Beach Chamber of Commerce
121-B Linden Avenue
Long Beach 2, California



- ☐ Please send literature on industrial Long Beach
- ☐ Send your Port magazine, "Harbor Highlights"

Name _____
Address _____
City _____
State _____

**LONG BEACH,
CALIFORNIA**

Please pin coupon to your letterhead



MONEY...cut to your financing pattern

Guided by a template or pattern, this profiler cuts metal to given specifications—and makes the end product fit precisely. Financing for machine tools or any production machinery performs its function better when it is “cut” to your financial pattern. C.I.T. Corporation arranges payment schedules related to the current financial needs of the buyer and to his expected income pattern.

For over forty years C.I.T. Corporation has made a specialty of solving equipment purchase problems with the right “kind” of money and financing services.

You can finance any type of production equipment on long terms through C.I.T. Corporation. If you choose, you can use Pay-As-You-Depreciate Plan which offers terms up to 10 years. We will set up PAYD Plan payments which parallel the equip-

ment's efficiency and money-making ability . . . larger in the early years—lower in the later years.

There's a C.I.T. Plan that is right for you. For complete details write or call any office listed below.

C.I.T. Corporation is a subsidiary of C.I.T. Financial Corporation; capital and surplus over \$250 million. In Canada: Canadian Acceptance Corporation Limited.

Atlanta, 55 Marietta St., N.W., Boston, 250 Stuart St., Chicago, 221 N. LaSalle St., Cleveland, Leader Building, Dallas, 1309 Main St., Denver, 655 Broadway, Detroit, 1625 Cadillac Tower, Houston, 1100 E. Holcombe Blvd., Jacksonville, 1710 Prudential Bldg., Kansas City, 210 West Tenth St., Los Angeles, 416 W. Eighth St., Memphis, 8 North Third St., New York, One Park Ave., Philadelphia, 3 Penn Center Plaza, Portland, Ore., Equitable Building, San Francisco, 120 Montgomery St., Seattle, Northern Life Tower



In Business Abroad

• • •

Sharp Rise in Oil Production

Is Welcome News in France

France got good news this week. Production of crude oil, the country's largest consumer of foreign exchange, was 55% higher in France and its overseas territories in August, 1958, than in the same month last year.

The rise is due mainly to new production from the Hassi Messaoud field in North Africa. Production, which began in January, 1958, had risen to nearly 10,000 bbl. daily by last month. In the year from September, 1957, through August, 1958, total crude production in France and its overseas territories reached about 40,000 bbl. daily, or nearly 30% over the preceding year.

• • •

U.S. Puts Import Quotas on Lead, Zinc;

Officials Still Seek International Accord

This week the Administration imposed import quotas on lead and zinc. Pres. Eisenhower described the restrictions as "better suited" than higher tariffs. Imports will be limited to 80% of the annual average during the 1953-57 period. The Tariff Commission had recommended higher tariffs some time ago, but it split 3-to-3 on proposed quotas.

The new quotas are stirring up a storm in lead-zinc producing countries that depend on exports to the U.S. for a sizable chunk of their dollar earnings. Hardest hit will be Peru and Mexico, but Australia and Canada, though smaller exporters, are already complaining, too.

Washington officials handling minerals policy say that the "emergency" relief this week does not mean that the Administration has backed down from its basic opposition to quotas and higher tariffs.

State, Commerce, and Interior Dept. delegates to the recent London lead-zinc conference will continue to push for White House approval of emergency production and export quotas on an international basis, pending a long-term market study by the United Nations' Commodity Commission.

Most Washington officials apparently still have high hopes for the long-term acceptance of the London conference suggestions.

• • •

Foreign Companies Say the Dice Are Loaded When They Bid on U. S. Defense Contracts

Another rumpus over "buy American" policy is gathering steam in Washington. The current fracas has the State Dept., plus British and Italian makers of electrical equipment for Army Engineer projects, pitted against the Defense Dept. and U.S. manufacturers of heavy electrical equipment.

Recently, the Administration's policy has been generally to declare U.S. bidders low as long as they were only about 6% higher than a foreign competitor.

MORE NEWS ABOUT BUSINESS ABROAD ON:

- P. 156—U.S. TV film makers shoot for bigger sales in growing foreign markets.
- P. 166—While Warsaw negotiators talk, Chinese on Quemoy gird their defenses.

Now in addition to having to bid at least 6% under the lowest U.S. bidder, foreign manufacturers have discovered a second obstacle. Apparently in response to demands from domestic producers, the Pentagon has ruled that all bidders on U.S. government projects must have testing and repair facilities available or under construction in the U.S. or Canada.

The Corps of Engineers, in issuing bid invitations for new equipment at the Fort Peck Dam last month, announced that low bidders would have to have the kind of facilities that most importers do not have. Legnano Electric Corp., an Italian company, complained to the State Dept. that the regulation was essentially discriminatory.

The State Dept. intervened, and the Pentagon modified its ruling to permit a foreign company to contract for testing and repair facilities with companies in the U.S. or Canada.

But the State Dept. wants the ruling eliminated entirely. When the Fort Peck invitations were opened last week, English Export & Trading Co. had underbid Allis-Chalmers Mfg. Co. on two contracts; Legnano was under General Electric on a third. The contract awards still have to be made, and the end to the fight is not yet in sight.

• • •

Crack in Indonesia's Investment Door

Still Looks Tiny to Foreign Businessmen

Although Indonesia's Parliament has just ratified a foreign investment bill over hot Communist opposition, and after six weeks of debate, its passage hasn't impressed foreign businessmen much. The bill reflects the coolness toward overseas investors that has prevailed in the 13-year-old republic ever since the Dutch companies were expelled (BW-Dec.14'57,p44). For example:

- It guarantees foreign enterprises against nationalization for only 20 years—or 30 years in the case of big enterprises.

- Foreign investment is specifically barred in railways, tele-communications, domestic navigation, electric power, atomic energy, and mining of vital minerals. There's apparently some hope, though, for foreign enterprises in mining of vital minerals if the government holds shares in the business.

The brightest spot for foreign capital seems to be in ore processing, since all of the tin, bauxite, manganese, and nickel mined in Indonesia is shipped abroad.

First chance is expected to go to joint Indonesian-foreign enterprises, and to foreign-owned businesses in fields earning foreign exchange.

Meanwhile, the Communists are leading an attack on Shell and Standard-Vacuum Oil, which have asked a 66% rise in local gasoline prices, citing sizable losses.

U.S. TV Taps Worldwide Market



WORLDWIDE TV HIT is series featuring Lassie and Timmy, its master. With them is Jack Wrather, whose TV enterprises get good part of their profits from overseas sales.



FOREIGN VIEWERS, such as these in Japan, find American TV films appealing. The expanding overseas TV market is becoming a big outlet for U.S. TV film sales.

Oilman Jack Wrather's TV enterprises are prime example of how American distributors are opening up overseas outlets.

"French kids now pack six-shooters and wear coonskin caps," says a Paris TV director, commenting on the impact of U.S. TV films in France. "Even their parents apparently are starved for sight of the lonesome prairie."

In faraway Australia, a Melbourne TV executive bluntly says: "If a film series like *Ramar of the Jungle* goes over in the States, and we have the dollars, we snap it up without delay."

From Bangkok, Thailand, to Birmingham, England, American TV film companies are pushing the hard sell, hoping that their half-hour series of Westerns, mysteries, and situation comedies will lure viewers overseas as much as they do here. Already, some 18 film companies, from ABC Film Syndication to ZIV, are doing an estimated \$20-million business annually in foreign markets. With TV still an infant industry in many countries, the present sales volume may be just the beginning.

• **Sudden Merger**—It's this big potential overseas market that helped form the backdrop for a sudden marriage of TV film interests last week. In a complex deal—typical of the whirligig world of TV—Independent Television Corp. headed by Texas oilman Jack Wrather (picture) paid over \$12-million for control of Television Programs of America, Inc. The purchase puts ITC in the front row as a contender to become the largest U.S. distributor of TV film series abroad.

Before Wrather's move to buy it, TPA claimed to be one of the largest distributors of half-hour films overseas. It has sold over 15 properties, ranging from *Charlie Chan* to *Tugboat Annie*, in 33 countries. It has dubbed in dialogue in its films in five languages, including Japanese, and outfitted some of them with sub-titles or running narration in such languages as Thai and Arabic. Several competitors—ZIV, for one—have an over-all gross bigger than TPA's approximately \$14-million. But probably no TV film maker could make TPA's boast of doing around 30% of its business overseas.

• **Growing Trend**—The combined company, Wrather's ITC and TPA, will end this year with 40% of its sales made abroad. Eventually, in five to seven years, all TV film distributors will get half their revenues from overseas, in Wrather's opinion. That follows the pattern set by the motion pic-

GET YOUR NEW PLANT NOW!

READY TO OCCUPY—OR MADE TO ORDER



Up to 100% FINANCING

Is the high cost of financing delaying your expansion program? It needn't. Low-cost financing programs offered by communities in our service area are the answer to your problem. They enable you to occupy either an easily adaptable building now available or move into a new plant *made to your order*. In either case, you will be dollars ahead in operating costs.

For details on available sites, plants and financing write

Area Development Department • Room 1006

WEST PENN ELECTRIC SYSTEM

50 BROAD STREET, NEW YORK 4, N. Y.

WHEN IS A SAFE Not Safe?



Answer: when it lacks the Underwriters' Laboratories label. If you own an old unlabeled safe don't expect it to protect your valuable records in a severe fire. And keep in mind that 43 out of 100 firms losing their vital records in a fire never reopen. Also keep in mind that there is no safer safe in the whole wide world than a Meilink A label safe. See your Meilink dealer or write for folder to Meilink Steel Safe Company, Toledo 6, Ohio.

with **MEILINK** it's for keeps

Most complete line of safes and insulated products

Top 10 TV Markets

Country	No. of TV Sets Operating
United States	48,500,000
United Kingdom	9,313,800
Canada	3,075,000
West Germany	1,700,000
Japan	1,600,000
Italy	880,000
France	800,000
Brazil	700,000
Mexico	400,000
Netherlands	350,000

Note: Soviet Union has estimated 2,500,000 sets.
Data: Television Digest.

ture makers, who now count on some 50% of their revenue coming from foreign showings. As one sign of this TV trend, CBS Films followed up Wrather's purchase of TPA by announcing the formation of British and West European subsidiaries to boost foreign sales of its film series.

I. Tycoon in the Making

Wrather's bankroll comes from the Dallas-headquartered oil business he inherited from his father. But the yen to become a TV tycoon is his own inspiration.

Over the past nine years, with John L. Loeb of Carl M. Loeb, Rhoades & Co. as a financial partner, 40-year-old Wrather has moved up fast in the entertainment world. He purchased KOTV in Tulsa for over \$2-million, then joined with investor Helen Alvarez in buying San Diego's KFMB-TV and KFMB (radio) for \$3-million. (In May, Wrather and Loeb bought out the Alvarez' interest, as well as her holdings in the Disneyland Hotel and other properties.)

• **Quick Deals**—Three years ago, he paid around \$3-million for the Lone Ranger radio and TV programs, which included the gold-mine rights to Lone Ranger merchandise, comic strips, and books. He quickly parlayed this into sales (actually lease-rentals) of Lone Ranger shows all over the globe. He also headed a syndicate that bought New York station WNEW for \$4-million and later sold it for \$7-million.

By 1957 he was setting up his Jack Wrather Organization in a new building in Los Angeles; buying out Muzak Corp., which pipes music into offices and restaurants; and acquiring TV's Lassie, the most profitable collic ever to bark on a home screen. (It's a TV hit round the world, grossing \$4-million to date, because—as one executive explains it—"Lassie has a heart and is opposed to violence.")

"Wherever I've put a dollar," says

FOR
RESTLESS
DESIGNERS:

*Stainless Steel
Nerves by TMI*

We make most of our tubing for men whose lives and reputations depend on perfecting perfection itself. They dare to do things like "sub-ing" the pole...like breaking the will of earth's gravity...like putting the atom into chains of service unlimited! It's usual for such people to expect us to do the impossible. The performance of TMI tubing continues to prove their confidence in TMI well-founded.

Meanwhile, TMI never stops in its program of developing new and better ways of cold drawing stainless steel and special alloy tubing in small sizes.

We like to make the best better...especially when it helps you make a better product or a more satisfying profit.



- All Types of Stainless Steel—seamless and welded
- Hastelloy* alloys B, C, F, X, Multimet* (N-155) alloy, and Haynes* alloy No. 25
- One-Piece (No Weld) Round and Special Shape Bulb Capillary Units
- Multiple Diameter I.D. and O.D. Tubing to Specifications Special Shapes.

*Reg. TM of Union Carbide and Carbon Corp.

METALLURGISTS, ENGINEERS,
MANUFACTURERS—SPECIALISTS
IN SMALL DIAMETER TUBING
.030" TO .625" O.D. WITH
TOLERANCES AS CLOSE AS
.001" WHEN REQUIRED.

**TUBE
METHODS
INC.**

BRIDGEPORT (Montgomery County), PA.



How pagemaster® helps keep order in Yankee Stadium

All kinds of things can happen where up to 70,000 excited people gather.

But in New York's famous "Home of Champions" Stadium Manager Jim Thomson can keep close control over events with the help of a PAGEMASTER Selective Radio-Paging System by Stromberg-Carlson.

Stadium supervisors and assistant managers, equipped with transistorized, pocket-size PAGEMASTER receivers, are strategically stationed in all parts of the stadium. Mr. Thomson can dispatch any number of them to any area on a moment's notice. Here's how.

When extra men are needed at any locality, the manager has his telephone switchboard operator set the private code signals of the men he wants on the PAGEMASTER Encoder (a compact unit placed next to the

switchboard). A flick of a switch puts the calls "on the air."

Instantly, the receivers of the men called (and only theirs) respond with a clearly audible tone. The men pick up the telephones near their stations, get their instructions and go into action.

A PAGEMASTER system will give you this kind of fast contact with key people—whether you manage a factory, warehouse, hospital, hotel, oil field or school. You can have a system engineered to your requirements, whether you need just a few receivers—or a few thousand. Systems are available for lease or purchase.

For details, contact your area PAGEMASTER distributor. You'll find him on the Yellow Pages under "Calling and Signaling Systems." Or write to us at 200 Carlson Road.

"There is nothing finer than a Stromberg-Carlson"



STROMBERG-CARLSON
A DIVISION OF GENERAL DYNAMICS CORPORATION

Pagemaster Sales • Rochester 3, N. Y.



Electronic and communication products for home, industry and defense



MANNY REINER, who heads foreign sales for Television Programs of America, has helped push the company into some 33 countries around the globe.

Wrather, "John Loeb has put a dollar." Wrather, the front man, has taken all the publicity bows. Loeb acts as his silent partner.

II. Solid Organization

While there are good profits to be made from TV film sales abroad, Wrather says, the trick is to build a solid producing and marketing organization—and build connections with the right people.

• **British Tie**—He practiced his preaching last July when he tied up with powerful British interests to form Independent Television Corp. (ITC). The Wrather-Loeb team put up half the \$2.5-million capital. The other half came from Associated Television Ltd. (ATV) and Incorporated Television Programme Co., Ltd. (ITP).

ATV is the most successful of the four "program contractors" handling British commercial TV. It racked up an \$8.4-million profit in 1957, after only two years' operation. ITP, 22% owner of ATV, ranks as the biggest TV film maker in Britain. Altogether, it has turned out 15 film series, with Robin Hood the best seller so far. It has "co-produced" several series with U.S. companies, including Television Programs of America—which Wrather's ITC just bought out. Both ATV and ITP bigwigs, such as Prince Littler and Val Parnell (also director of the London Palladium), sit on ITC's board.

• **Mutual Advantages**—The Anglo-American makeup of ITC is its real strength. It assures Britain's ITP of distribution in the U.S., the No. 1 TV market in the world. At the same time, Wrather, ITC's chairman now controlling a large package of TV film series,

no matter which you use ...



you'll get a better job on Wausau Duplicator

Artisans of Fine Papers

Wausau
IMPRESSION PAPERS
WAUSAU PAPER MILLS COMPANY, BROKAW, WISCONSIN

ASK YOUR STATIONER OR WRITE FOR SAMPLES



Designed for dividends...



Save up to 60%!
NOW—open motors
for extreme conditions

It's the *Super-Seal* motor line! Here's an open motor design so completely unaffected by moisture, dust, dirt, oil, acids and alkalis that it can be used in many applications previously requiring more costly enclosed motors. *Savings range from 15% to 60%.*

The key to *Super-Seal* motor superiority is insulating techniques. Available in any integral horsepower frame size, smaller motors offer a stator encapsulated by epoxy resin. Larger sizes incorporate *Silco-Flex* insulation. Both insulating systems are unsurpassed. Proof? An encapsulated motor was run at full load for hundreds of hours in 4% brine solution.

It's one example of A-C engineering. Coupled with a standard motor line from ½ hp and larger — this engineering know-how means real benefits for your process or equipment.

Contact your A-C representative, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin. *Silco-Flex* and *Super-Seal* are Allis-Chalmers trademarks.



A-5801

ALLIS-CHALMERS

gets a firm foothold in Britain, the No. 2 TV market. The obstacle there has been the quota on U.S. films—no more than 14% of viewing time—with almost all U.S. film makers battling to sell their products within the quota. Wrather says that ITC is the only foreign company that now can guarantee distribution of half-hour series in Britain.

III. Mode of Operation

Television Programs of America (TPA), ITC's latest acquisition, has already done much of the legwork for Wrather in expanding into the foreign field. And TPA's career has been as dynamic, in its own way, as Wrather's.

The company was started five years ago by Milton A. Gordon, a specialist in the complicated financing of motion-picture production, and Edward Small, one of Hollywood's big producers. Each put up \$150,000. By August, 1957, Gordon considered TPA such a hot property that he bought out Small's interest for \$2-million.

• **Economy Tactics**—One of Gordon's key techniques for producing TV series cheaply and assuring wide distribution was to work out two-way or three-way deals. He would combine—for example—American, Canadian, and British interests into one financing and distribution package.

His first two-way TV deal was the *Count of Monte Cristo* series. He fixed a tentative budget of around \$27,000 for each half-hour show in a 39-week series (plus a 13-week rerun). The "pilot" film indicated that costs would run as high as \$33,000. So he arranged with Britain's ITP to make the series in Western European locations for about \$26,000 per half hour and have the series screened on British commercial TV, with TPA receiving \$5,000 for each showing. Thus, a series that could be sold in over 140 "spot" markets in the U.S. cost only \$21,000 a show, instead of a possible \$33,000.

Gordon arranged somewhat similar deals for *The Last of the Mohicans*, *Charlie Chan*, and *Tugboat Annie*. *Cannonball*, going on TV this fall, also has been sold to the Canadian Broadcasting Corp. and to Britain's ITP in a three-cornered deal.

Screen Gems, subsidiary of Columbia Pictures and one of TPA's main rivals, says that a large chunk of TPA films are old—mostly good for less profitable reruns. Screen Gems, on the other hand, claims it has 14 new shows going this season, a backlog of 24 old shows still fresh for overseas markets, and old Columbia movies, which sell well abroad.

• **Foreign Prospects**—Still, in the past two years, Manny Reiner who runs

Right off the *Wire*

An ion microscope has been made that will magnify five million times.

A new unit attaches to the turntable of any record player and converts it into a tape recorder.

All cords and cables give better service when handled properly. TIREX® portable cords and cables, *although jacketed with fortified and tempered neoprene armor and "lead cured" for toughness and smoothness*, will give still longer service if not subjected to unreasonable abuse.

A new digital computer for automatic air navigation and bombing will perform 62,500 computations per second. It is said to be the fastest airborne system.

Theoretically, small hydrogen bombs exploded at the rate of two an hour in an underground chamber, could produce twelve per cent of all the electric power in the United States.

Belt drive through variable-speed pulleys is used in a new foreign automobile.

Short wave radio signals have been transmitted half way around the earth without material distortion by reflecting them from a flat spot on the moon. The method might be used for intercontinental telephone calls.

A church in the tropics has a concrete roof covered with sprayed-on white synthetic rubber. It reflects heat and has proved to be economical in application and maintenance.

Plans have been announced for a power transmission line to carry 750 kv, about twice the voltage now carried in this country.

Sound waves are being used to weld aluminum foil.

C-L-X (sealex) is Simplex' pliable, corrugated metallic lightweight exterior sheath. It is an impervious pliable DUCT — with the Simplex cable of your choice built-in.

By using polarizing filters on searchlight lenses and filters with opposite polarization on viewing glasses, the reflections from water droplets can be minimized and better vision in fog obtained.

Nuclear batteries appear to be the most promising power source for the electrical systems of satellites. Heat produced by the radiation from an isotope is converted by a thermocouple into electricity.

Further information on these news items and on Simplex cable is available from any Simplex office. Please be specific in your requests.

Powdered metal parts can now be made up to thirty inches in diameter.

A radio that can be carried in the hand is said to be the first tubeless two-way set for use in VHF mobile communications.

A supersonic burglar alarm gives a warning whenever there is the slightest movement of anything within its area.

An electronic instrument can be made to talk in any language. Coded signals sent to it are converted into actual speech.

New fluorescent highway lamps, believed to be the most powerful in the world, give 55,800 lumens of light.

A car-sized heat pump is being developed that will cool or heat an automobile interior.

Waterproof, heat-sealed shipping bags made of polyethylene film are said to be stronger than those made of conventional materials.

A tape recording system has been designed that will monitor twenty-eight radio frequencies simultaneously twenty-four hours a day.

A ceramic paint has been developed that does not have to be fired, will not flow at high temperatures and dries in thirty-five minutes.



TIREX® is TOUGH

"TIREX" is the trailing cable that feeds power to this giant strip mining shovel. "TIREX" cords may also carry the current to your workshop tools and be subjected to the rigors of life on portable saws and sanding machines. Tough, flexible "TIREX" assures you of long, unfailing service and unequalled economy. That's why manufacturers of quality products insist on "TIREX"® (made only by SIMPLEX).

SIMPLEX WIRE & CABLE CO.
Cambridge, Massachusetts and
Newington, New Hampshire

Simplex

*High quality cables for: Mining
Power & Lighting • Construction
Transportation • Communications
Signalling*

"The American manufacturers of transoceanic telephone cables"



DANGERS of launching a NEW PRODUCT

Snell Research can help overcome them

Here's how, in some typical
case histories of Snell clients:

Product Research and Development

—A few years ago Snell was retained to develop new products, applications, and markets for sugar. Extensive research and development work by Snell resulted in the creation of a new synthetic detergent—based on sugar!

Product Application—A Snell client in the paper industry, for whom we had developed a fine additive, wanted to explore uses in other fields. Unfortunately, their highly qualified staff's experience was limited to the one field. Snell, with experts in practically every product field, found the new product has potentialities as both a good emulsifier and a paint plasticizer. Only the very largest manufacturing companies can duplicate the breadth of experience and background the Snell "brain-trust" of technical experts can offer you!

Product Improvement—One Snell client found their product, an adhesive bandage, slipping in quality. Tape was going gooey in storage on druggists' shelves. Snell research helped this client bring his product quality up to equal the best on the market, and retain his share of sales.

Product Evaluation—A Snell brewery client wanted to expand production and take advantage of a more efficient production technique but feared the taste of the beer might suffer. Snell food technologists, taste panels, and engineers checked the new process and hundreds of samples of beer made under new and old systems, recommended the switch to the more profitable modern process. The change went unnoticed by the customers, and sales continued to climb.

Market Research—A Snell client with a waste product had briefly considered building a plant to use it to manufacture another product; but had given up after their own brief survey showed the new product to be already overproduced. When they consulted Snell for checking, however, Snell predicted there would be a shortage within three years. The client waited two years, built the plant—and now has a profitable new product instead of a waste!

Toxicology—One of the largest frozen food companies began getting complaints on the flavor of one of their green vegetables. Since hundreds of thousands of dollars were at stake, they consulted Snell to find out what was wrong. Snell by analyzing tests, and checking on the farm, was able to prove that the taste—actually toxic—was due to a new type of insecticide sprayed on the fields hundreds of yards away on a windy day long before the harvest!

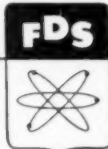
Engineering—A large midwestern firm desired to produce its own brand of instant coffee, to possess outstanding flavor, body, and bouquet. They engaged Snell to handle all details, from design to engineering, to supervision of actual process startup. The fine qualities "built into" this resultant product made it such a success that Snell was commissioned to enlarge the plant, which has recently gone into production.

What's Your Product Problem?—

Whatever it is, and whatever your product field—chemicals, chemical specialties, personal products, pulp and paper, protective coatings, plastics, textiles, foods, petroleum, rubber—Snell has men who "know the score" in that field, and who can work with you creatively and profitably in developing, producing, protecting, and marketing new ideas. This broad experience can be decisive in protecting not only your ideas, but also the thousands of dollars you spend developing them. And the cost of Snell service is less than you might imagine! Half the jobs we do cost less than \$1000!

SEND FOR FREE BOOKLET

Our brochure, "How to Develop Successful New Products," tells the whole Snell story. Why not send for it today? No obligation, of course. Foster D. Snell, Inc., Dept. B-9, 29 West 15th Street, N.Y. 11, N.Y.



SNELL

New York, N. Y.
Baltimore, Md.
Bainbridge, N. Y.
Worcester, Mass.

TPA's foreign sales (picture, page 158) has successfully pushed the company into far-flung foreign markets, and now has a stable of 19 overseas representatives. As one example, when N.Y. Confidential, a new TPA production, appears here this season, it will go on TV screens overseas at the same time—in Helsinki and other cities.

Reiner, following in the footsteps of ZIV, just made a swing through Moscow, Warsaw, and Prague. He hopes to arrange a reciprocal deal with the Russians—possibly Lassie (even Russians seem to like it) in exchange for Soviet cultural films like the Moiseyev Ballet shown here last season. If Reiner has any complaint, it's not against his Iron Curtain reception, but rather the highbrow tastes in Western European TV. "I cannot but be commercial," he says. "I'm all for art, but it has to be commercially salable."

IV. The Spur

Now that it has bought TPA, Wrathcr's ITC is upping its original production budget for films from \$10-million to nearly double that amount. Walter Kingsley, ITC president who formerly ran ZIV's "syndicated sales," will backstop Reiner's expansion moves.

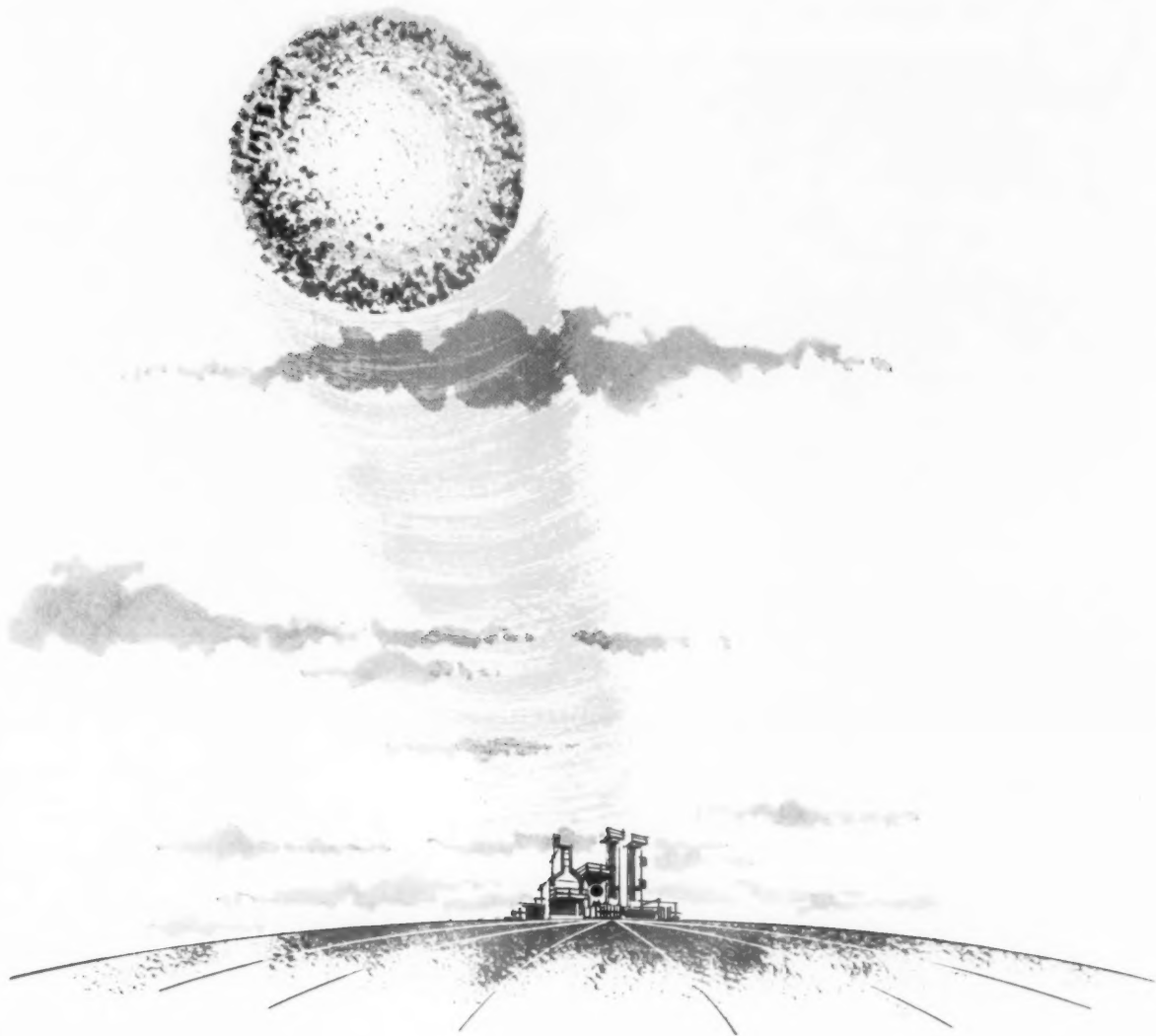
To some extent, ITC is making the overseas market a prime target because of the need to recoup rising production costs here through broadened sales. Rerun profits also aren't so good now in the home market.

But ITC's expansion overseas—like the spreading out of its competitors—is basically a natural development. TV film makers now know their way around foreign countries. Selling overseas has been more expensive than here, partly because of dubbing costs and other expenses, but profits from foreign sales are beginning to come in.

• **Foreign Sets Multiply**—Probably the biggest spur to the export drive is simply the rapid growth of foreign TV (chart, page 157). Four years ago, Western European countries formed a regional link, called Eurovision, which is now operating on a fairly large scale. (However, most European TV is still government-controlled.) Three years ago, British commercial TV got going—and now brings in a \$48-million yearly profit and accounts for around 10% of British advertising revenue. Then, Latin America and the Far East, especially Japan, are building up a TV industry—mostly privately operated.

Right now, there are some 600 stations and 23.8-million sets outside the U.S. That compares with 532 stations and 48.5-million sets here. But the rate of growth, both in stations and set purchases, is much faster overseas than in the U.S.

• **Profits Problem**—Yet one problem—



World's most mysterious influence

Its "mere presence" causes an age-old substance to change into an entirely new material! What is the strange entity that exerts such tremendous influence?

It is known as a catalyst . . . heart of the fabulous chemical processes that re-arrange molecules! Produced by the ton and shipped by the carload . . . each UOP catalyst is a high-precision performer if ever there was one!

It brings about precisely-controlled chemical reactions . . . sometimes two or three simultaneously . . . without changing itself. It withstands handling, shipping, tremendous heat, pressure and chemical corrosion for a prolonged period of operation, retaining its physical form

and catalytic properties. Manufactured to precise quality standards, its unique physical and chemical characteristics assure uniform results over long periods of use.

A pioneer in the design and engineering of petroleum refining processes, Universal has also directed its efforts to the research, development and manufacture of the best possible catalysts to obtain maximum yields of quality products.

In refineries the free world over UOP processes are using a wide range of Universal's catalysts. And each catalyst performs to exacting specifications, precisely, yes even mysteriously, making petroleum man's most useful servant.



UNIVERSAL OIL PRODUCTS COMPANY

30 Algonquin Road, Des Plaines, Illinois, U. S. A.

More Than Forty Years Of Leadership In Petroleum Refining Technology



FOR ALUMINUM COMPANY of CANADA, LTD.



Precipitation process used to remove alumina for calcining and smelting.

Bruning Copyflex Machines Make Light Work of Paperwork!

Up to 2,000 engineering prints a day, plus hundreds of bills of material and business reports... that's the vast amount of work turned out on a fast, simplified basis by modern Copyflex reproduction and copying machines for Aluminum Company of Canada, Ltd.

The performance of Copyflex is one of the reasons why progressive Alcan is successfully meeting a rapidly growing demand for its products throughout the world. With Copyflex, bills of material initiating a vast amount of Alcan work are reproduced directly from original translucent worksheets with no rewriting or retyping of information. With Copyflex, engineering prints are reproduced in seconds—all sharp, clean, and legible.

You, too, will like Copyflex because of its flexibility and economy—8½ x 11" prints or copies cost less than a penny each for materials. Machines require no venting or plumbing. Call your nearby Bruning office, today, or write: Charles Bruning Co., Inc., 1800 Central Road, Mt. Prospect, Ill. In Canada: 105 Church St., Toronto 1, Ontario.

BRUNING

Copyflex



Copyflex Model 575—Bruning's top model for ultra-fast, heavy-volume reproduction and copying. Full 46-inch printing width. Other models for every use, including desk top model.

and it's a problem for any company operating overseas—is getting out its profits. Most of the TV film makers' customers are stations or networks, rather than sponsors—as in the U.S. One way out is to aim at sponsors that are U.S. companies with overseas sales or branch plants. ZIV, for one, has sold film series in Latin America by going to Goodrich, Procter & Gamble, Westinghouse, Richard Hudnut, and General Electric. These companies advertise on Latin stations—and ZIV merely sends the bills to company headquarters in the U.S. for dollar payments.

• **Overseas Picture**—Despite problems, from getting paid to fighting quotas on U.S. film imports into some countries, ITC and other film makers are making quite a dent overseas:

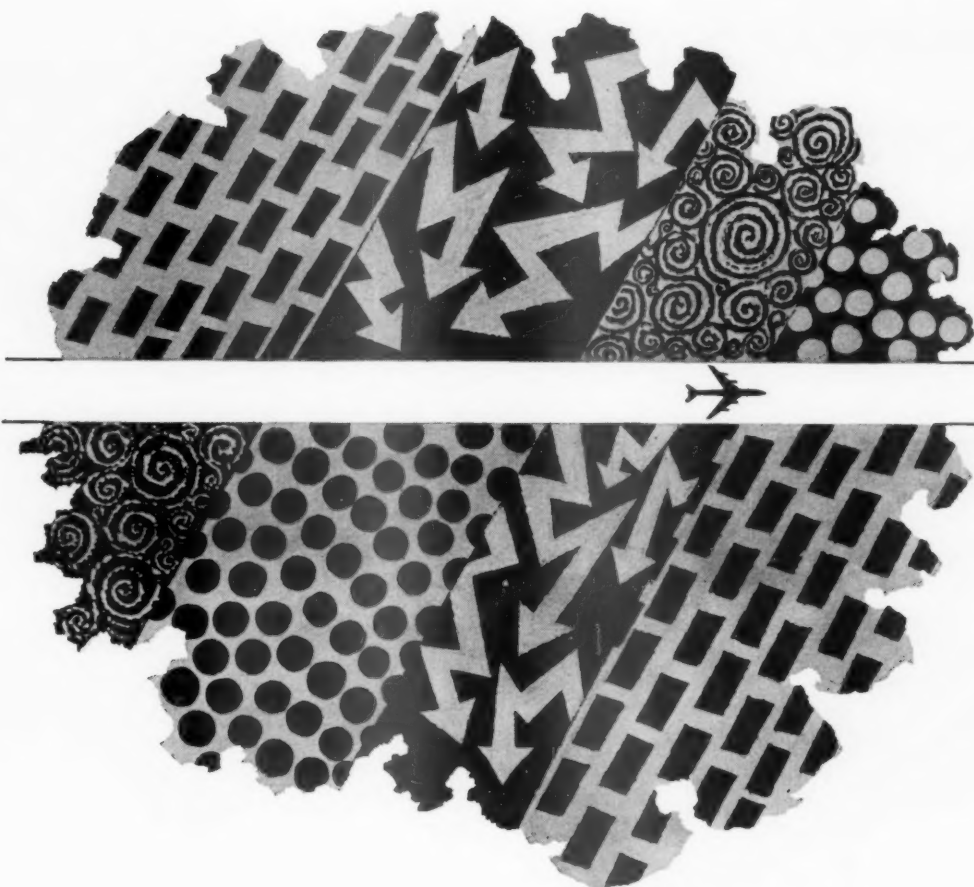
In the Far East, Japan takes to U.S. films for their "mass appeal" and their "reasonable price"—slightly cheaper than local live shows. (TV began in Japan in 1953 with one government station and one commercial.) Today there are 28 stations, with 108 expected by 1960 (so many partly because of difficulties in transmitting in a mountainous country), and 1.6 million TV sets. The principal problem for U.S. film makers is the tight dollar allocation—a maximum \$300 per half-hour show.

TV in Australia is only two years old. But already there are six stations, 320,000 sets. On the commercial stations, 80% of the films are from the U.S., with Father Knows Best a top favorite.

In Latin America, both Havana and Mexico City are big markets. "Gun-smoke, Rin Tin Tin, and the Lone Ranger sponsored by three of our clients are among Mexico's top 10 TV shows," reports McCann-Erickson's Mexico City office. But one trouble is looming: Local live talent thinks that stations are giving too much time to film screenings. And there's the same trouble in Caracas, Venezuela.

In Western Europe, West Germany is a fast-growing market. Film makers are selling fairly well in France—and there's a possibility the government may allow commercial TV to begin soon. In Italy, TV is state-owned, with strict limits on commercials. In Holland, where government stations follow the country's complex political and religious lineup, no commercials are permitted.

In Britain, where Wrather's ITC has its closest ties and biggest hopes, U.S. shows are popular, but not so much as they were. Britain has 6-million sets and an estimated 20.3-million viewers. One bright spot is the possibility of another commercial channel opening up—added to the one already operating and the BBC's channel. **END**



THE PILOT KNOWS *EXACTLY* WHERE HE IS

The pilot glances at his instrument panel. One of the dials looks like a taximeter. "108," it reads. That means 108 miles to Dallas. And a pointer shows the *direction* to Dallas.

Now it reads 100 miles...90...80. A little right rudder. That's it. And now 70 miles away, and right on course...straight as an arrow to the airport.

The pilot knows *exactly* where he is. He knows the distance and direction to a known ground station—at any instant of flight!

It's called "VORTAC." It means air safety VORTAC is the new navigation system approved for nationwide use by the Civil Aeronautics Administration.

Soon you will hear a lot about VORTAC. It combines the existing VOR ranges with the military TACAN system (Tactical Air Navigation) developed by ITT. Now the CAA has awarded a contract to ITT to provide TACAN equipment for 132 VORTAC

ground stations throughout the United States. Eventually the number of VORTAC ground stations will be 1230. Soon all commercial and private, as well as military aircraft, will be able to tune in on VORTAC stations. All they need is an additional air-borne instrument—a "little black box"—weighing less than 35 pounds!

Jet air liners will need it most

Traveling near the speed of sound, jet air liners *must* have VORTAC. An error in navigation could quickly throw them miles off course.

VORTAC will be ready for them when they arrive in the near future—ready to pinpoint their position in the sky, by giving them direction within one degree, distance within two-tenths of a mile to a selected ground station.

VORTAC was made possible by ITT engineering—one of many ITT contributions to air navigation and safety of flight. The famed Instrument Landing

System, used throughout the free world, is another. The first radio compass is another. Other advanced aids are now under development by top ITT engineers and scientists.

With VORTAC, the pilot knows exactly where he is. The long-heralded "common system" of air navigation—common to military and civil aircraft—is here at last. Thanks to VORTAC, TACAN, and ITT engineering.



... the largest American-owned world-wide electronic and telecommunication enterprise, with 80 research and manufacturing units, 14 operating companies and 128,000 employees.

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION 67 Broad Street, New York 4, N. Y.

FARNSWORTH ELECTRONICS COMPANY • FEDERAL ELECTRIC CORPORATION • FEDERAL TELEPHONE AND RADIO COMPANY • ITT COMPONENTS DIVISION
ITT INDUSTRIAL PRODUCTS DIVISION • ITT LABORATORIES • INTELEX SYSTEMS, INC. • INTERNATIONAL STANDARD ELECTRIC CORPORATION
KELLOGG SWITCHBOARD AND SUPPLY COMPANY • ROYAL ELECTRIC CORPORATION • AMERICAN CABLE & RADIO CORPORATION • LABORATORIES
AND MANUFACTURING PLANTS IN 20 FREE-WORLD COUNTRIES

Quemoy Sits Tight Under Red Shelling

While the U.S. talked with Red Chinese negotiators in Warsaw at mid-week, the crisis in the Formosa Strait continued. The Pentagon rushed jet planes, Snark and Nike missiles, and supplies to bases on Formosa. The U.S. Seventh Fleet, on the ready but holding its fire, patrolled the Strait. Meanwhile, Nationalist Chinese convoys, usually at night, shuttled supplies to tiny Quemoy—an island besieged on three sides by Red Chinese artillery.

It was Quemoy, situated within sight of the mainland and armed with 100,000 Nationalist troops, that triggered Peking into stirring up new troubles for the U.S. Last week, *BUSINESS WEEK*'s

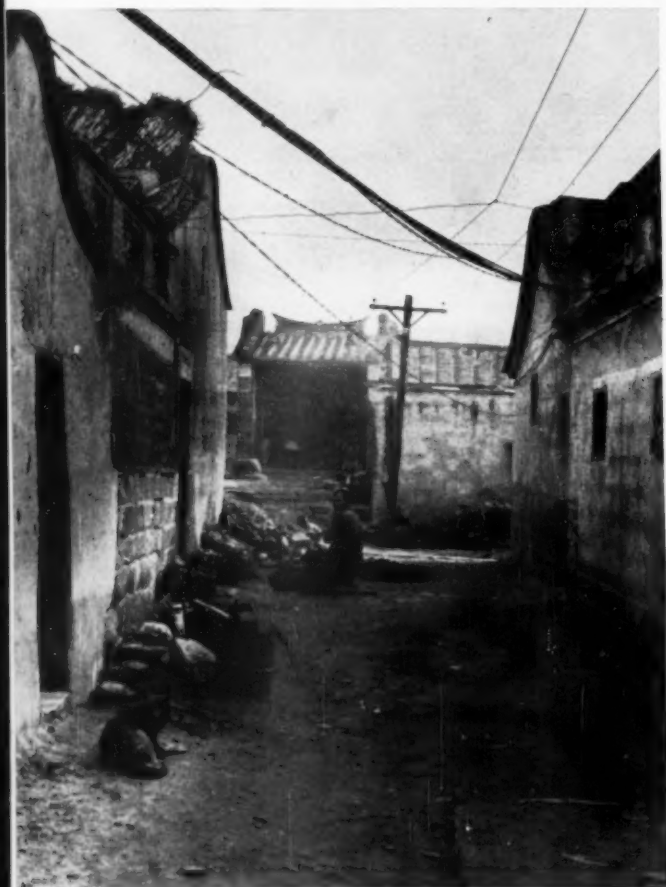
Tokyo bureau chief visited the beleaguered island (pictures). Here's what he found:

Quemoy looks like a gigantic anthill. In every direction over the 50 sq. mi. of sandy soil and rock, there are fortifications and shelters. For nine years, the Nationalists have been digging in. Since Aug. 23, when the Red barrage began, the soldiers have been rebuilding defenses.

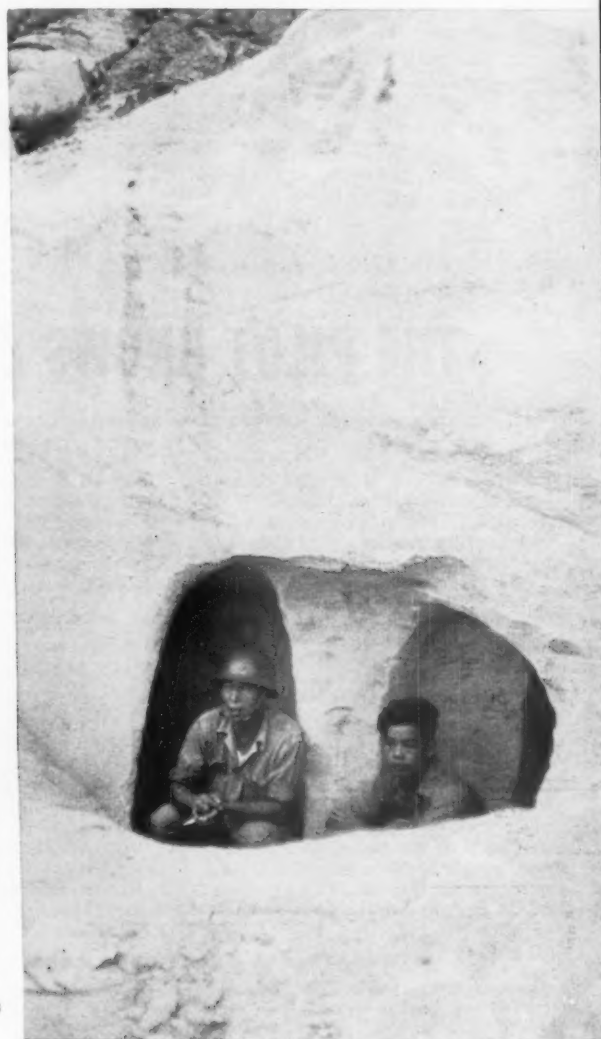
• **Heavy Fortifications**—You find every kind of dugout and fort—from concrete pill-boxes, to shallow, sandstone foxholes even short Chinese can barely fit into. The Nationalists have put up barbed wire and barricades as defense lines



FORTIFICATIONS along beaches are the first



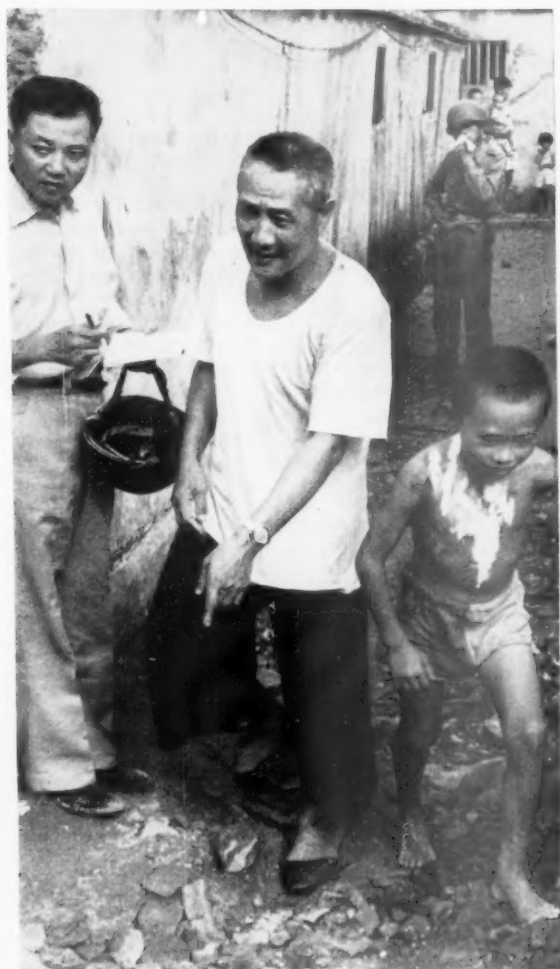
QUEMOY VILLAGE has taken a beating from constant Red shelling. About 1,200 houses have been destroyed.



TUNNELS carved out of limestone protect Nationalist soldiers waiting for supply convoys from Formosa.



Line of defense for the 100,000 Nationalist troops on Quemoy against possible Red Chinese invasion from Amoy, only 3 mi. away.



CASUALTIES among Quemoy's 45,000 civilians so far number about 65 killed. Many more persons have been injured.



MEALS for Quemoy's defenders are pretty good, but the soldiers have to take cover in trenches to escape Red shelling.

When employees itch, they scratch—and in the process they cost U.S. industry an estimated \$100 million a year.

Industrial dermatitis, ranging from falling hair and simple rashes to clusters of boils that are slow to heal, may be caused by any chemical compound that the worker handles, from metallic salts to fat solvents. But with today's constant changes in industrial techniques, company skin specialists must keep a constant watch for new, obscure occupational irritants, warned Dr. Donald J. Birmingham, chief dermatologist of the U.S. Public Health Service at Cincinnati.

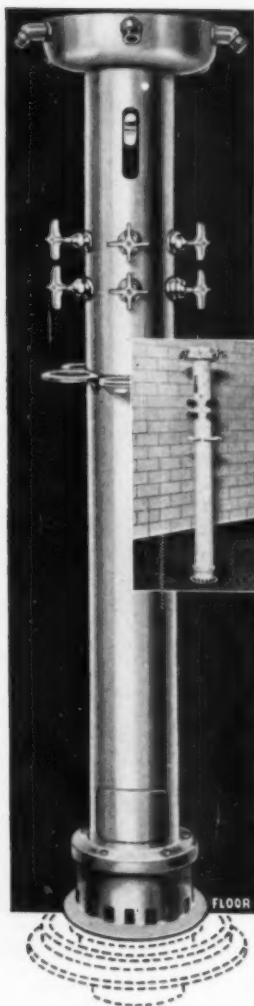
The most reliable preventive measures, according to dermatologist James W. Jordon of Buffalo, N.Y., are: Air conditioning, to get rid of dust to which some workers are sensitive; protective clothing (such as heavy aprons, helmets, and gloves that fit into detachable sleeves), and showers before leaving work.

"SHOWER BATHING... before leaving"

Reliable preventive measure against industrial dermatitis

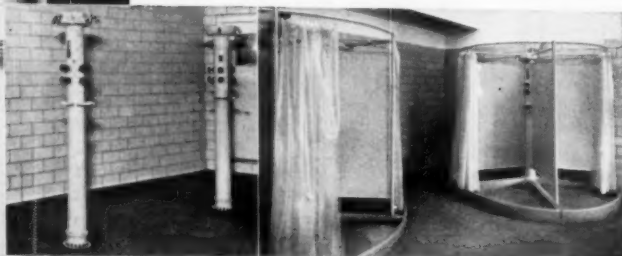
Included in the preventive measures mentioned by dermatologist specialists—"Shower before leaving work" is important.

INSTALL BRADLEY SHOWERS NOW



Bradley Multi-Person Shower Units come partially assembled, saving installation time and expense. One Bradley Column provides up to 5 showers with each bather having complete control of water volume and temperature. Only one set of piping connections required for each 3- or 5-unit Shower.

Columns alone are used without stall separating panels; while where greater privacy is desired, partitions divide the unit into separate stalls furnished with or without curtains.



Above, at left: Shower Columns without stall partitions are illustrated.

Above: Bradley multi-person Shower with partitions and curtains.

Catalog 5601 includes illustrations, dimension data, and complete specifications. Why not let us mail you a copy. **BRADLEY WASHFOUNTAIN CO.**, 2341 W. Michigan St., Milwaukee 1, Wis.



Write for Catalog 5601 which includes all dimensional data.

BRADLEY

multi-person

SHOWERS

Distributed Through Plumbing Wholesalers

across the island, just in case a Communist landing couldn't be stopped at the beaches.

The general feeling is that after the first few days of bombardment, the Reds gave up the idea of an invasion, if they ever had one. But the Nationalists are confident of withstanding any attack, so long as the supply lines to Formosa can be kept open. In 1949, they knocked out a Communist division invading Quemoy.

• **U.S. Aid**—Quemoy's defenses look impregnable. Its supplies seem adequate for at least a two-month siege, even without new supplies from Formosa. Everywhere you see U.S. equipment—Jeeps, howitzers, gas masks. Overhead, the Nationalist Air Force has shown up remarkably well, despite outdated F-84s and F-86s that do battle with superior Mig-17s. At night, American sorties fly protection for the island—the Nationalists don't have all-weather, night fighter planes.

Despite obvious American influences, this is still a Chinese war. Troops on Quemoy are mostly soldiers who came over from the mainland in 1949 at the time of the Communist's takeover. But because many of the mainlanders are getting old, the replacements are mostly Formosans.

Troop morale seems high, despite three weeks of concentrated shelling. The soldiers take their situation stoically—they raise chickens, rabbits, and ducks around their dugouts.

The people really taking a beating are Quemoy's 45,000 civilians. They try to find shelter in Air Force tunnels. While it's true Red guns could hardly miss hitting something on tiny Quemoy, they seemed to have zeroed in especially on Old Quemoy Village and the civilian hospital.

• **Over-All Situation**—Despite Nationalist fortifications and good morale, the over-all situation is difficult. The ocean side of the island, where supplies must be landed, is under constant shell fire. The Nationalists are under orders from the Americans not to attack mainland gun emplacements from the air. And artillery fire from Quemoy doesn't make sense—the Reds could easily triangle in on the gun positions if the Nationalists fired often.

U.S. convoying operations have helped stop Communist attacks on Nationalist ships. But U.S. ships don't go inside the three-mile limit, so the Reds bang away within that limit.

This quarantined war is a strange affair. You load into a T-6 trainer, cross over the Strait in less than 40 minutes to the tranquil Pescadores Islands—jumping-off place for convoys. Another hour aboard a Nationalist commercial plane, and you're back in Taipei, a place that acts as if there were almost no war going on at all. **END**



“And In This Corner...”

Turn a knob—and the world moves into your living room... comedy, drama, congressional investigations, a parade, sports, news... the whole wonderful world of television. Helping to keep it bright, clear and steady in millions of living rooms is the television serviceman—a good man to have in your entertainment “corner.”

TELEVISION AND RADIO SETS have become so much a part of our daily lives that they are largely taken for granted. You never think about having to do without them. If anything goes wrong, you simply call a serviceman.

Ever think about that serviceman? He's a pretty important figure in your entertainment world... the indispensable man who knows *what's* wrong—and *how* to fix it.

Behind his ability to bring the picture back to your screen—and the smile to the children's faces—lies a wealth of specialized knowledge and information

representing a heavy investment in time, training and equipment.

Yes, the man in your entertainment “corner” is an expert. And among his most important “helpers” in bringing you fast, efficient service are Mallory service-engineered electronic parts. These dependable, top-quality, precision-made components have been specifically designed for fast, easy installation in different makes of sets. And Mallory's extensive distributor set-up makes the right parts to fix your set readily available in every part of the country.

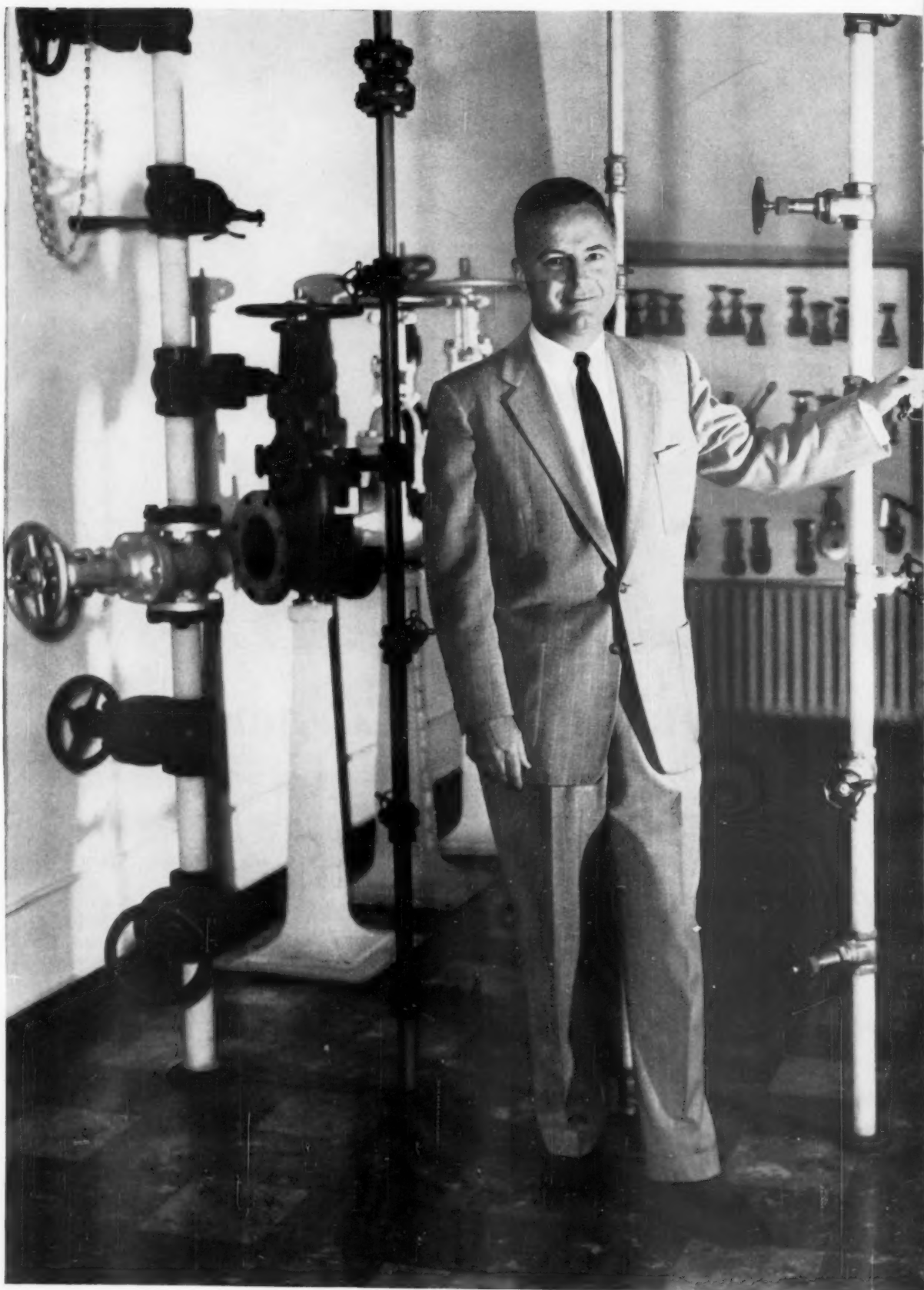
Mallory—the company *at home in tomorrow*—is proud to serve the television industry, as well as the nation's other leading growth industries... with precision products and broad experience in the fields of electronics, electrochemistry and specialized metallurgy.

MALLORY

SERVING INDUSTRY WITH THESE PRODUCTS:

Electromechanical • Resistors, Switches, Tuning Devices, Vibrators
 Electrochemical • Capacitors, Mercury and Zinc-Carbon Batteries
 Metallurgical • Contacts, Special Metals, Welding Materials

P. R. MALLORY & CO. Inc., INDIANAPOLIS 6, INDIANA



"BUSINESS PUBLICATION ADVERTISING HELPS BOOST SALES"

"How do we know? Well, industrial management is seriously concerned about the rising costs of plant and equipment maintenance," relates Melvin W. Pauly, Sales Vice President of the Lunkenheimer Company. "Because our valves are designed to keep down maintenance costs, we have an important story to tell. We use leading business publications to get the story across to the people who influence valve purchases. This is the audience we want to reach, and judging from sales results, we are reaching it very effectively."

IF WHAT YOU MAKE OR SELL is bought by business, you can "mechanize" your selling by *concentrating* your advertising in the McGraw-Hill publications serving your markets. These business publications pinpoint your prime prospects . . . enable you to talk to them in their own language, while they're in a *business mood*.

McGRAW-HILL PUBLICATIONS



McGraw-Hill Publishing Company, Incorporated
330 West 42nd Street, New York 36, N. Y.



6 STEPS TO SUCCESSFUL SELLING



MORE ADVERTISING HERE MEANS

MORE SALES TIME HERE

PRODUCTION

New Way to Make Better Iron

Latest in the array of direct reduction processes turns ore into low-carbon semi-steel instead of pig iron.

After two weeks of previews for iron and steel experts from most leading U.S. steel companies, the public got its first look this week at a new kind of iron smelter at Niagara Falls, Ont. The semi-commercial plant (bigger than a pilot model) demonstrates another new method of continuous direct reduction of iron from ore without using a blast furnace.

This plant belongs to Strategic-Udy Processes, Inc., a subsidiary of Strategic Materials Corp. of Buffalo and Montreal. Co-host at the viewings is Koppers Co., Inc., of Pittsburgh. Koppers, a major supplier to the steel industry, signed a licensing agreement last year with Strategic.

Rumors about the Strategic-Udy process have been bouncing around the industry for the past year or so. Now the developers are ready to declare, on the basis of semi-commercial operation, that theirs is "the first truly universal smelting technique to appear on the metallurgical horizon that is capable of changing the economics of the steel-making process."

This claim, on top of the rumors, is what made the steel experts beat a path to Niagara Falls, Ont.

• **Poorer Ore, Better Iron**—With the elimination of the last bugs in the process during the past year, Strategic and Koppers are satisfied that they can offer several advantages:

- Like a dozen or more other direct reduction processes, it eliminates the costly blast furnace.

- The Strategic-Udy process can be fed by standard blast-furnace ores, but it can also produce iron economically from ores that can't be used today in blast furnaces or any other known methods. This would include low-grade ores containing titanium, which are abundant in Canada. And other versions of the process are said to be able to smelt low grade manganese and other ores.

- The present processes continuously, a molten flow of semi-steel that's ideal for making high-quality steel. Blast furnace pig iron commonly contains about 4% carbon, which must be removed in the steelmaking process; the Strategic-Udy product has a carbon content as low as 0.2% to 0.5%.

- **Canadian Invention**—The process was developed by Dr. Marvin J. Udy, one-time Canadian government metallurgist who holds more than 100 U. S.

and Canadian patents in the field of electro-metallurgy. Udy estimates that work on the new smelting process has cost more than \$6-million during the past five years. The bill was paid by Strategic's shareholders and Strategic's president John C. Udd.

Udd, born in the U.S. but now a Canadian citizen, is a former vice-president of Sheraton Corp. of America and is president of Sheraton of Canada. He has successfully promoted such unrelated projects as a cement plant in Ontario, copper mines in Quebec, the Sheraton hotel chain, and Western Auto Supply Co. (BW—Aug. 16 '58, p. 52).

- **How it Works**—The new iron process uses mostly standard equipment, including a rotary kiln and an electric furnace of the type that's used in making steel. There are two steps:

First, a direct-fired rotary kiln is fed with powdered ore (which can contain as little as 25% iron), along with essential fluxes and a fuel, which can be low-volatile bituminous coal, anthracite coal, or coke. In the kiln, these mix with a hot combustible gas from the electric furnace, and the mixture reaches a temperature between 1100C and 1300C. In the kiln the ore is partially reduced from iron oxide to iron.

The second step is the one that saves electrical energy, always a critical problem when feeding ores directly to electric furnaces. In the new method, the material from the kiln isn't allowed to cool. It is either fed directly into the electric furnace at white heat or else turned into insulated feed control bins, in which further oxygen is removed in a controlled atmosphere.

- **Furnace Operation**—Either way, the furnace is charged with hot material. In its reducing zone, where the process of taking out the oxygen to turn iron oxide into iron is completed, the furnace is operated with an electric arc that dips into the layer of floating slag but doesn't reach the surface of the molten iron itself, as in most furnaces.

In the Strategic-Udy process, the short arc is regulated for position and intensity by fast-acting voltage control systems. The intensely hot reducing zone is small, closely controlled, and enveloped in slag. Apparently, the close control over the reducing zone is the unique advantage of the system, permitting the furnace to produce semi-steel instead of pig iron and to remove extraneous elements selectively.

Continuous operation of the system fills the electric furnace periodically and taps it into a ladle on a regular schedule, as in other ironmaking processes.

- **Power Economy**—Because the feed material is preheated, the power consumption per ton of product is markedly reduced.

For example, reduction of highly concentrated ore in an electric furnace generally requires from 2,200 to 2,400 kwh. of electricity per ton of iron. The semi-commercial Strategic-Udy plant consumes power at a rate of 1,500 to 1,800 kwh. per ton, but Udy says this consumption should drop to 1,200 kwh. in a large-scale plant.

- **More Savings**—Koppers and Strategic point out that where power is cheap, low-grade ores can be used without primary beneficiation. And when beneficiation is preferred, the finely powdered ore is ready to feed the Strategic-Udy equipment without agglomeration, sintering, or pelletizing.

Moreover, low-grade bituminous, anthracite, coke, peat, and lignite are effective fuels and reducing agents. The furnaces operate flexibly, can be closed down or started up in about four hours, will run at partial capacity without losing efficiency.

- **Its Place in Industry**—Even if it lives up to every word of its advance billing, the new process won't soon supplant the blast furnace. For the bulk of high-volume integrated steel production, the system built around the blast furnace is still the champion low-cost producer, despite its immense cost of installation.

However, a sizable direct-reduction operation could be installed for a fraction of the cost of a blast furnace system, and this means a whole new line of thinking for the company that considers adding primary iron capacity. Relatively small units could be installed to integrate a hot metal shop or for adding small increments of steel capacity.

This is already true of other direct reduction processes, such as Bethlehem's H-iron, the R-N process of Republic Steel and National Lead, U.S. Steel's Nu-Iron, the British Cyclosteel process, and about 10 others. As ore beneficiation processes improve, the operating cost of direct reduction systems will steadily decrease.

Production economics already look good enough, at today's prices, to keep the steel industry and its suppliers spending upward of \$10-million a year for development. **END**

MODERNIZE PRODUCTION CONTROL

*for less cost
than you think!*

Standard Instrument production controls can be used singly or in combination to:

- record on tape the on-off pattern of any machine, and total its actual productive time. (TIME RECORDER-TOTALIZER — \$65.)
- count, inspect, sort, start and stop machinery photoelectrically. (ROBOT-EYE PHOTO-ELECTRIC CONTROL — \$65 for most models)
- count and batch high-speed production electronically, actuate mechanisms at any desired count. (TALLY COUNT — \$295 for 3-decade unit)

— print out production totals on time-indexed tape, at predetermined intervals. (TALLY-PRINT — \$275, with automatic reset)

For complete information on the above and other production controls, write for Brochure GR-9.



standard

INSTRUMENT CORPORATION
657 BROADWAY, NEW YORK 12, N. Y.

LOS ANGELES' finest Industrial Center *Planned and Restricted*



10 minutes from center of city. Located on Golden State Freeway. Home of many national concerns.

COURTESY TO BROKERS

Write for Free Brochure

**GRAND CENTRAL
INDUSTRIAL CENTRE**

P.O. Box 3157, Grand Central Station
1435 Flower Street

GLENDALE 1, CALIFORNIA

NEW PRODUCTS



Chemical Agent Makes Lots of Things Jell

A new powder developed by B. F. Goodrich Chemical Co. is expected to make jelly out of a whole range of cosmetic and household creams, pastes, and liquid polishes. You could even stir it into your Martinis if you wanted a dripless cocktail (picture).

Because of its versatility and ready availability, the new thickening agent also is expected to replace the natural vegetable gums now commonly used to impart thicker-than-water consistency to lotions and creams.

Goodrich's new water soluble chemical agent, called Carbopol, is a fluffy white powder that makes possible an in-between formulation for products now made in a liquid, paste, or wax form. The resulting jellied product can be applied with the ease and speed of a liquid, but without spills or drips.

• **Food, Too**—And because it's non-toxic, Carbopol also is expected to make its way into food and drug products. It's used now in toothpaste.

Another of the new thickening agent's talents is its ability to suspend particles in a liquid. It actually can sustain golf balls in a liquid. More normal applications, however, will be to keep the fine particles in a mixture from separating from the liquid, such as in herbicides and insecticides.

• **Cost**—The new chemical, a carboxy vinyl polymer, is produced in a new \$3-million plant at Calvert City, Ky. Price is \$2.50 a lb. **END**

Tubexperience in action



*X ray sits
in final judgment
on nuclear
components*

When fabrication work is done, and all other inspections run off, nuclear components still face one acid test. At the Nuclear Products Division of Superior, X rays are used to explore the component's inner structure, revealing any defect and verifying the complete weld penetrations that were achieved in controlled atmosphere welding chambers.

Nuclear components require workmanship of unusually high precision. They are made from reactor grade zirconium, Zircaloy, hafnium, boron, titanium, vanadium, columbium, thorium and uranium. Machining is done to tolerances as close as .015 in. in 11 ft. and inspection is performed on surface plates, accurate to 25 millionths of an inch.

Superior has for several years been supplying well-known atomic energy firms with control rods, control rod channels, fuel rod containers, and other reactor elements. We are well equipped—in facilities, personnel and experience—for this difficult, exacting work.

If you need fabrication work of unusual precision, talk the problem over with us. For more information on our work in the nuclear field, write for Data Memorandum 23, "Reactor Components," Superior Tube Company, 2000 Germantown Ave., Norristown, Pa.

Superior Tube

The big name in small tubing
NORRISTOWN, PA.

All analyses .010 in. to 3/8 in. OD—certain analyses in light walls up to 2 1/2 in. OD

West Coast: Pacific Tube Company, 5710 Smithway St., Los Angeles 22, Calif. • RAYmond 3-1331

In Money & Credit

• • •

S&L Leaders Criticize the Way Their Banking System is Run

Officials of the nation's savings and loan associations this week privately voiced approval of a report that is sharply critical of the Federal Home Loan Bank System, which supervises and provides credit to most of the nation's S&Ls.

The report, based on a two-year study by the Savings Assn. League of New York, charges that the FHLB's 11 regional banks follow divergent policies—some making long-term loans, others limiting the amount and duration of loans, and still others turning down all long-term requests. A uniform policy should be put into operation, says the League.

It also criticizes the bank system for paying more attention to administrative housekeeping than to policy matters. Pointing out that the FHLB Board has the same relationship to its regional banks as the Federal Reserve Board to its 12 regional banks, the League demands that the FHLB Board also use its powers to act independently. This would avoid the kind of "crisis," according to the League, that developed in 1955, when the FHLB yielded to pressure from the Administration and cut off lending to member S&Ls.

While a uniform lending policy might be established, it is considered unlikely that the FHLB Board would attempt to act independently of the Administration or the Fed. In fact, since 1955, it has tended to coordinate its credit extension with the over-all credit policy pursued by the Fed.

• • •

IMF Asks Its Members to Boost Capital to Help Finance Trade

The International Monetary Fund has come up with a new approach to the old problem of financing trade expansion. In a study of liquidity—the means of financing world trade—IMF calls for an increase in the capital contributions of its members. This position strongly backs the new U.S. policy of directing foreign aid through IMF and the World Bank (BW—Aug. 30 '58, p14).

The report points out that total gold and foreign exchange reserves are rising as a percent of the volume of world trade. This, however, has been of little help to some Latin American countries. With unfavorable balances of payments, they have been faced with what amounts to devaluation of their currencies.

Thus the IMF study argues against the stand taken by some West European countries, that the only way to finance trade expansion is by raising the price of gold. This would stimulate gold production and add to total reserves, but it would not necessarily help Latin American and other underdeveloped countries out of their payments troubles.

The study points out that the basic problem is to

distribute reserves to countries that need them most. To provide this mobility of reserves, the Fund wants its capital increased, so that it can intervene in force when a currency is threatened.

• • •

Federal Reserve Officials Divided On Urgency of Anti-Inflation Policy

The Federal Reserve System, which favors a sphinx-like pose traditional to central banking, was talking out of both corners of its mouth last week.

An official of the New York regional Fed said privately that monetary policy is "not yet restrictive" and not likely to become restrictive soon. The economy has still a long way to go before resuming a "normal rate of growth," he says.

But according to M. S. Szymczak, a member of the Board of Governors in Washington, the money managers are pursuing a restrictive policy in order to ward off inflation (page 70). In fact, observers thought that Szymczak spelled out, in unusual concreteness, a new tight-money line.

Most bankers deduce from the tightening of money and the rise in interest rates that Szymczak's view is the correct one. But New York's position indicates that the money managers are not unanimous, and this may make it difficult to forge a clear-cut policy of restraint.

• • •

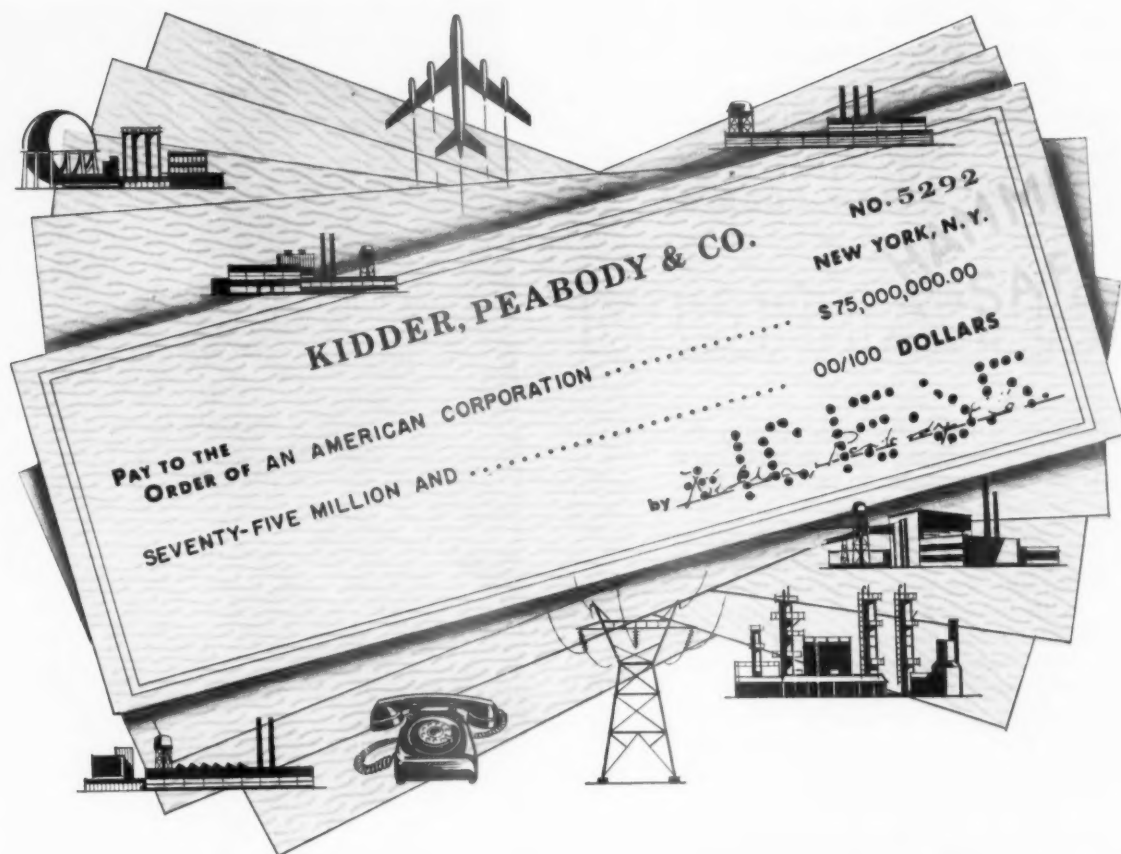
Money & Credit Briefs

The Dallas Clearing House Assn., following the lead of groups in Georgia and New York, is forming an investment company to provide risk capital for small business. Under the Small Business Investment Act of 1958, passed in August, national banks can invest 1% of their capital and surplus in corporations to lend to small business. The Texas bankers like the idea because income from debentures held by the investment companies is 100% tax-free.

While many countries are battling to keep their soft currencies from getting softer, Austria looks like a throw back to gold standard days. Latest figures show that the Austrian schilling is backed by gold and foreign exchange reserves of 106%—up from 82% only a few months ago.

The premium on the Canadian dollar, up to 4¢ earlier in the year, was back to 2¢ this week. Observers say the slide, caused principally by a drop in U.S. investment demand in Canada, may go further. Some even predict a discount on Canadian money by yearend.

Despite the record-breaking crops moving to market (page 153), the Federal Reserve's squeeze on money will not be aggravated by farm credit needs. The Federal Reserve Bank of Chicago said this week that farm-loan demand at country banks, after running ahead of 1957 dropped back in August. The bank said that "feeders,"—who buy cattle for fattening—are borrowing less than usual because cattle raisers are holding back cattle to build up drought-depleted herds.



How 133 Major Companies Raised \$1,000,000,000 of New Capital

Again in 1957, as in recent years, we ranked among the top investment banking firms in the number of financings successfully negotiated.

In 1957, and the first six months of 1958, through public offering or private placement, we helped one hundred thirty-three companies raise \$1,000,000,000. All of it was obtained through Kidder, Peabody & Co. or its corporate affiliate, Kidder, Peabody & Co., Incorporated, acting as manager or co-manager of underwriting groups, or as agent.

When your company needs new capital, call the Managing Partner in New York or the Resident Partner in the Kidder, Peabody office nearest you.

Aerojet-General Corporation
Carolina Telephone and Telegraph Company
Central Hudson Gas & Electric Corporation
Collins Radio Company
Commercial Credit Company
Florida Power Corporation
Florida Power & Light Company
The General Tire & Rubber Company
Idaho Power Company
International Milling Company

Interstate Power Company
Missouri Public Service Company
The Mohawk Rubber Company
Panhandle Eastern Pipe Line Co.
William H. Rorer, Inc.
South Carolina Electric & Gas Company
Standard Packaging Corporation
Standard Pressed Steel Co.
United Utilities, Incorporated
The Washington Water Power Company

113 additional Corporations — not listed.

KIDDER, PEABODY & Co.

FOUNDED 1865

Members New York, American, Boston, Midwest and Pacific Coast Stock Exchanges

NEW YORK 5 - 17 Wall Street - HA 2-8900 • NEW YORK 17 - 10 East 45th St. - MU 2-7190

BOSTON 10 - 75 Federal Street - LI 2-6200 • PHILADELPHIA 9 - 123 So. Broad St. - KI 5-1600 • CHICAGO 3 - 33 So. Clark Street - AN 3-7350

LOS ANGELES 14 - 210 W. 7th Street - MU-3271 • SAN FRANCISCO 4 - Russ Building - GA 1-6744

Take a New Look at TITANIUM

Wonder metal? Restricted supply? Not today. Titanium is daily *proving* its economic advantages in more and more industrial applications.

And Mallory-Sharon...world's largest integrated producer of special metals... is ready *now* to assist you in designing with titanium. We can supply your requirements for titanium and titanium alloy sheet, strip, rod, bar, plate and other mill products...many of them from stock.

Check below for ways titanium and its alloys can serve you now! Then write us about your requirements, or contact our nearest sales office.



For corrosion resistance—Turbine impeller made from titanium has given *four years'* service in highly corrosive application that killed other metals in weeks or even hours. Impeller agitates slurry containing cobalt, nickel, copper arsenic, iron and sulfuric acid.



For technical facts write for "Titanium Fact File"—giving advantages, metallurgy, corrosion properties, information on machining, welding, forming. Our Service Engineering group is ready to assist you.



For availability—Delivery time on titanium has been cut by Mallory-Sharon's ingot inventory in certain grades and analyses. Here, orders can be started in the ingot stage, saving time for fabricators. In addition, a wide range of sheet and bar sizes can be shipped direct from stock.



For high strength-to-weight—In the U.S. Air Force's B-58 Hustler, built by Convair, Fort Worth, heat-treated titanium alloy was substituted for alloy steel—for wing fittings bearing heavy loads. Result: 44% saving in weight, with strength equal or superior to the previous material.

MALLORY-SHARON

METALS CORPORATION • NILES, OHIO



Integrated producer of Titanium • Zirconium • Special Metals

In Marketing

• • •

Celanese Takes on a British Partner To Expand Its Synthetic Fiber Market

Celanese Corp. of America is joining hands with Britain's giant Imperial Chemical Industries, Ltd., to market Teron, a polyester synthetic fiber that is chemically the same as du Pont's Dacron.

The arrangement announced this week provides for the setting up of a jointly owned Celanese-ICI subsidiary to produce the fiber in this country. ICI's technical, research, and production knowledge will be made available to the new company. Celanese itself will market Teron. The venture is Celanese's first entry into the synthetic fiber field outside its line of cellulose—rayon, acetate, and triacetate. Up to now, du Pont, under a patent arrangement good until 1961, has been the sole supplier of the Dacron-type polyester fiber in the U.S. Outside the U.S., ICI has marketed the fiber under the trade name Terylene. The joint-venture company's new plant site has not been announced, but construction is expected to begin in 1959. Eventually, output will hit about 40-million lb. a year.

The polyester field, a rapidly growing one since about 1950, has two other recent entries. Eastman Kodak Co. announced it will go into commercial production of Kodel, a polyester-type that apparently is different enough to avoid an infringement of du Pont's patent rights. In addition, it is reported that Beaunit Mills, Inc., in conjunction with Goodyear Tire & Rubber Co., is developing a polyester synthetic.

Celanese's Pres. Harold Blancke commented: "Our new company will provide a major source of supply for an exceptionally versatile fiber which, in a relatively few years, has established a solid market position." Chief uses for Teron will be in apparel, curtains, and industrial fabrics.

• • •

Firestone Agrees to Eliminate Banned Adjectives in Tire Ads

Firestone Tire & Rubber Co. will drop such adjectives as "deluxe," "super deluxe," and "super" from names of its second- and third-line passenger tires. Other companies, according to Akron reports, are studying the move.

Earlier this year, Firestone was cited by the Federal Trade Commission for promoting sale of the tires by use of descriptive names suggesting they were top-grade merchandise. The whole tire industry worked with FTC to put together a new tire advertising guide, effective Aug. 27, which also bans such descriptions (BW—Jun. 28 '58, p. 76).

Firestone, in a surprise move, announced its decision at an FTC hearing in Akron. J. Earl Cox, FTC examiner, predicted other companies will "do the same thing." According to Firestone, it will cost the com-

MORE NEWS ABOUT MARKETING ON:

- P. 178 Videotape, the electronic storage of TV programs and ads, may change industry practices.

• • •

NICB Gives Business a New Gauge To Consumers' "Money in the Pocket"

Discretionary personal income—the amount of total personal income after taxes and fixed commitments that is left for the purchase of such deferrable items as consumer durables, jewelry, watches, and a wide range of services—is being measured in a new annual and quarterly series by the National Industrial Conference Board. The series are designed, says NICB, both for "analysis of general business conditions as well as for marketing research in consumer goods industries."

Since 1939, the series' earliest figure, there has been a 360% increase in discretionary income—from \$22.7-billion to \$104.5-billion in 1957. As a percent of all post-tax income, NICB figures discretionary income dropped sharply from the wartime peak of 50% to about 34% in 1954. It rose slightly then, but began to decline after mid-1957. During the first quarter of this year, the annual rate fell \$4.9-billion, almost 5%.

"Major fixed commitments," says NICB, "rose \$700-million to \$74.2-billion from the fourth quarter of 1957, as increases in scheduled mortgage payments, net insurance outlays, tenant rent, and homeowner taxes more than offset a decline in consumer installment repayment."

Along with that, essential outlays jumped \$3.3-billion in the first quarter to \$116.5-billion, mostly because of a \$2.6-billion rise in essential food outlays.

As part of its series, NICB also records what it terms the "discretionary fund," which is discretionary income plus new installment debt extensions. That figure fell \$7.9-billion to \$137.9-billion in the first half of 1958.

NICB thinks its new series is more sensitive than the Dept. of Commerce's disposable personal income and is a quicker measure of general business conditions.

• • •

In Marketing Briefs

Grand Union Co., big New Jersey-based supermarket chain, is acquiring the 28-store Sunrise Supermarkets Corp., Long Island chain. Grand Union currently operates about 434 stores in 11 Eastern states, with annual sales running about \$500-million. Sunrise volume is about \$45-million.

Mastic Tile Corp. of America and Air Reduction Co., Inc., are jointly forming a new chemical manufacturing firm, Cumberland Chemical Corp. The new company will make chemicals that Mastic uses in its own operations. Air Reduction will supply a major raw material needed by Cumberland.

Videotape Brings Change To TV

- The technique of recording TV programs and commercials on magnetic tape is now two years old.
- In its short life, tape has proved far superior to film in recording TV features for later release.
- Consequently, it is shaking up film producers, stations, advertisers, and even the national networks.

Ever since videotape made its appearance two years ago, it has been generating excitement within the television industry. By now, as the fever spreads to advertisers and viewers, it is becoming apparent that the new tape is reshaping the industry.

Videotape is an electronic process for recording TV programs and commercials—sound and picture together—on magnetic tape. It was introduced by Ampex Corp. at the 1956 convention of the National Assn. of Broadcasters in Chicago. Later, Radio Corp. of America put a color recorder on the market. The process is the most efficient method yet to produce a TV feature in advance and store it for release minutes or months later.

• **Recent Deals**—Videotape's impact on TV grows increasingly evident. This week, for example, Guild Films, Inc., a New York film distributor, signed a long-term arrangement with Hal Roach Studios, Inc., of Hollywood to collaborate in taping and selling TV programs and commercials. Guild already has a dozen or so tape shows in stock for sale to stations. To widen the market, Guild has also worked out a way to help stations acquire the costly equipment necessary to play back the taped shows for broadcasting.

Last week, National Telefilm Associates, which has moved into almost every phase of TV, took over Telestudios, Inc., a pioneer in making videotape commercials. The purpose was to prepare NTA to enter the videotape programming field.

• **Station Use**—These developments point up how videotape is stirring up the multimillion-dollar business of selling filmed TV programs and commercials. The tape has made its mark on TV broadcasting as well.

For local purposes, about 45 U.S. stations have installed videotape equipment for seemingly endless uses. Three Texas stations, for example, record local football games and broadcast the tapes over a regional network of 20 stations. Many stations use tape to record live events that conflict with normal schedules and play them later. KRCA in Los Angeles and other stations record

weekend shows during the week when crews are on the job. San Francisco's KPIX puts all its shows scheduled after 10 p.m. on tape during the day. Tactics such as this cut labor costs.

Another Los Angeles station, KTTV, has taped one of its own shows, *Divorce Court*, and sold it to other outlets. Like many TV stations, KTTV also employs its tape machine to make commercials for local sponsors. Many stations are expanding their news coverage, thanks to tape. Westinghouse Broadcasting Co. has installed tape machines in all five of its stations. Its Baltimore outlet, WJZ-TV, is even experimenting with a mobile unit that sends a signal from the scene of a news event back to the recording unit in the studio. Westinghouse stations also use tape recorders to improve their own programs, by taping show rehearsals and studying them for flaws.

• **Network Use**—The national networks have also taken extensive advantage of tape. Perhaps the major use is to solve the problem of coordinating schedules in the various time zones across the country. A program broadcast in New York at 8 p.m. would be seen in Los Angeles at 5 p.m. So while the show is being broadcast to Eastern audiences, the signal is sent by coaxial cable to the West Coast and recorded on tape. Then, at 8 p.m. PST, it's broadcast again from the tape. This technique replaces the older, unsatisfactory film or kinescope methods.

More important, networks, like the stations, are putting shows on tape for later transmission. An example is Columbia Broadcasting System, which pre-records many of its weekend features during the week at times when crews would otherwise be idle. American Broadcasting Co. may be the first network to air a taped series this fall.

• **What It Means**—There's much other evidence of the rapid growth of videotape recording. But the significant fact is that this growth has important implications for the entire broadcasting industry—stations and nets, as well as advertisers, agencies, and producers of programs and commercials.

Why is videotape recording so im-

portant? The answer lies in the simple fact that tape is such an effective way to record—in effect, to store—programs and commercials for later use. Using recorded programs basically affects a broadcaster's operations.

To understand this, take as a focal point the basic unit of the broadcasting industry, the station. A station has one product to offer its viewers, programs. It obtains these programs from three sources: live shows it makes for itself, film shows it buys from outside sellers, and—in the case of network-affiliated stations—from the network.

• **Live Show Woes**—For a station to produce live shows for its own use is difficult. It lacks the resources to stage the large-scale entertainments the public has come to expect. This limits the scope of its own shows. Depending on live shows limits a station's programming flexibility, since a live show almost has to go on when it's ready; it can't easily be switched because of, say, a sudden news break. Further, live shows are expensive. Once used, they are gone forever. They require facilities and crews, and between shows the crews usually stay around collecting wages.

Says Ralph Harmon, a Westinghouse Broadcasting Co. vice-president: "Speaking solely from the standpoint of the use of personnel, equipment, and other facilities, a station could operate most economically on a completely pre-recorded basis."

• **Film vs. Tape**—Of course, film is a way to store programs, and TV has relied heavily on it. But film results in a poorer picture than live TV. Many kinds of events can't be filmed for TV use, because of the time it takes to process the film. Film destroys the viewer's feeling of spontaneity. And film making is a distinctly different business from broadcasting. It requires different cameras, studios, and equipment and costly, time-consuming processing. Because of this, stations produce little film for themselves. Instead, they buy it from producers who can spread the cost of film making over many users.

In practice, stations must create many of their own shows. Videotape enables them to do this better and cheaper than doing it live or with film. Its picture quality is as good as live TV's. Tape shows can be created inside the TV studio, using a TV camera in conjunction with the recorder. Tape shows can be played back for broadcast seconds after the recording is made. Tape needs no processing; it can be erased and used again and again. With tape, the station can record many shows that otherwise would have to

Management Executives—

SEND FOR NEW COMPLETE ECONOMIC STUDY OF METROPOLITAN MIAMI



Let us show you how your company can profit by locating in this fast growing area.

A 24 section, complete economic analysis has just been prepared to supply you with complete data which will assist in determining how your particular manufacturing or statewide, national/international distribution operation can profit here. This important study will be mailed to you free of charge—in strictest confidence—if you write, on your letterhead, to the address listed below.

WRITE: John N. Gibson, Director
**DADE COUNTY
DEVELOPMENT
DEPARTMENT**
Section: 43
Chamber of Commerce Building
Miami, Florida



An agency of the Metropolitan Miami government



**It's
Sensational!
Shaving
Was Never
So Much
Fun!**

Your customers will appreciate the battery powered Globe Trotter Razor. Runs for hours on pen size cells. Palm-size...no cord...just flip a button! Shaves smooth and clean. Engineered to last for years. Obtained only through Shaw-Barton.

Charge up your customer relations program. Call or write.

"you're there" with...

SHAW-BARTON

Calendar and Specialty Advertising
SALES OFFICES IN PRINCIPAL CITIES
GENERAL OFFICES AND PLANT, COSHOCTON, OHIO

be broadcast live, or not at all. And operating on a pre-recorded basis entails tremendous savings in utilizing time, manpower, and facilities.

Tape offers networks most of the same virtues. As current practice demonstrates, networks also find that taping shows in advance gives them a far more efficient use of personnel and equipment. Use of tape for this purpose will expand.

• **Differing Views**—An innovation of such importance is bound to produce controversy. Almost everyone who discusses a videotape recording calls it "revolutionary." Estimates vary, however, on how far the revolution will go.

The networks are restrained. "Videotape is a revolutionary aid in recording," says Edward L. Saxe, CBS vice-president in charge of operations, "but it is only one more helpful device as far as the technology of the industry is concerned. It will not revolutionize the industry."

Other observers, though, think tape will force a revision of established industry patterns.

• **Example in Film**—What's happening in the TV film industry clearly demonstrates how tape can disrupt present methods. Film producers—especially those with heavy investments in film stock and equipment—are understandably nervous about the new tape. But tape's advantages force them to move into producing that way. Guild and Telestudios have already done so, of course. So have Filmways and Elliot, Unger & Elliot. Says Martin S. Ransohoff, Filmways president: "The film producer who expects to stay alive has to get into tape." Already there are newcomers in the tape business, too, such as General Videotape Service and Videotape Productions.

At first, these outfits will be producing mostly commercials. The market for taped commercials is expanding, as big advertisers and their agencies discover tape's flexibility and economy. Among the companies currently using tape for their TV ads are Colgate-Palmolive, Liggett & Myers, Lever Bros., and Kellogg. But the film producers will face a new rival in making taped commercials—the networks. The nets stayed out of film commercials, but they have done most of the producing of live commercials and are now moving into the taped variety.

• **More Shows on Tape**—As film producers make the transition into tape, there will also be more taped TV shows. John J. Cole, president of Guild Films, finds the greatest significance of taped shows in their lower cost. He says the same show cost 30% to 50% less on tape than on film, and his plan is to pass the savings on to stations. "The effects on smaller markets will be dramatic," he predicts. Cole thinks that

"Short Cutters" getting in the way?



Control in-plant traffic with an



Keep workers from wandering through potentially dangerous areas—guide traffic flow—with an Anchor Chain Link Fence. Thanks to Anchor's exclusive deep-driven anchors, the fence stands firmly erect for years, or can be moved quickly to another spot that needs to be isolated. For more details call your local Anchor office, today, or write for booklet. **ANCHOR FENCE**, 6530 Eastern Ave., Baltimore 24, Md.



Plants in Baltimore, Md.; Houston, Texas; and Whittier, Cal. • Sold direct from Factory Branches and Warehouses in all principal cities.

DELTA Air Freight

costs less than
you think!



Holds down inventories! Holds down costs of crating, insurance, capital tie-up. Protects against deterioration and market declines!



Call Delta Air Lines,
or write General Offices:
Atlanta Airport, Atlanta, Ga.

MOST COMPLETE ALL-CARGO SERVICE TO AND THRU THE SOUTH

CRATING
DETERIORATION
INSURANCE
CAPITAL TIE-UP
INVENTORIES



White Sands...and Light Metals

GREATER MIAMI HAS BOTH!

Fabricated light metal products are big business in Dade County, Florida, with more than 90 manufacturers engaged in this growing industry. Many of these businessmen naturally look to The First National Bank of Miami for complete financial services, both domestic and international. Whenever you do business in Miami or visit here, make First National your bank, too.



101 E. Flagler Street
Miami, Florida

MEMBER: FEDERAL RESERVE SYSTEM • FEDERAL DEPOSIT INSURANCE CORPORATION
BANKERS ASSOCIATION FOR FOREIGN TRADE

it will encourage new stations to open.

Another source of taped shows will be outfits now in the business of packaging live shows for the networks. One of these, Talent Associates, Ltd., is now assembling a taped presentation.

• **Threat to Networks?**—Some members of the industry conjecture that tape may alter network-station relationships, for two reasons: thanks to tape, stations can make their own programs more easily and cheaply, and more programs will be available cheaply from independent outside sources. Both these factors may break down the stations' traditional dependence on the networks for their programs.

The networks retort—with many stations in agreement—that stations will always need their shows because they have an edge in producing ability. Tape won't change this, they argue. "Creativity is not dependent on technical aids," says Edward Saxe of Columbia Broadcasting System.

But like any recording method, videotape does call into question the need for coaxial cable connections to distribute network shows. Station and network schedules often conflict because of local situations, and a station may prefer to run a network show at another time. The nets resist, but with tape offering a practical way for the station to delay a program, it will be harder to do so.

Still, the networks have a strong card to play—the advertisers' desire for simultaneity. Explains Saxe: "the advertiser wants to buy something which is predictable. He knows something about audience size and characteristics at a given time. Knowing this, he picks what seems ideal for him. He then wants to make sure he reaches the maximum number of people under these conditions."

• **Obstacles**—Despite the widely recognized benefits, there are a number of obstacles in the way of tape's future progress. Many prospective buyers have been discouraged by the high cost of the equipment—about \$45,000 for an Ampex recorder. Only 45 stations own the gear, and this makes a very limited market for syndicated tape shows and taped spot commercials.

Expansion is limited, too, by delivery schedules. With capacity to produce about 20 machines a month, Ampex has orders backlogged up to next February. There's also no satisfactory way to reproduce tapes in volume. Finally, union jurisdiction over tape has yet to be settled.

However, some knotty problems from the past have been worked out. Although it's apparently not foolproof, a method has been found to splice and edit tape. And present tapes are now interchangeable among all types of recorders. **END**



You can save money printing your own labels **using a MARKEM MACHINE**

If you want to save money on your labels . . . improve their appearance . . . be certain of having the right kinds at the right times . . . end inventory headaches, waste from obsolescence, and other label problems — look at the immediate and specific advantages a Markem machine working in your own plant can offer you.

In *savings*, a Markem machine makes it economical to print short runs with frequent changes in variables — the small volume jobs for which high production "outside" printing is unsuited and prohibitively expensive. Savings also result from smaller *inventories* and subsequent *reduced maintenance*; complete *elimination of waste* from obsolete labels; and often, combining *two separate labels into one*, thereby saving the production and application costs of the second label.

Proof that the Markem Method *does* save money are the thousands of manufacturers using Markem machines, type and specialty inks today — to print labels ranging from saddle and die cut roll types for food packages to fabric and paper styles for clothing and textiles . . . pressure sensitive types for the products of the automotive,

electrical, electronic, tool and hardware, pharmaceutical, photographic and other industries. Typical Markem machine operations range from overprinting variables on printed tape and cut labels to the complete printing, pink-ing or cutting, and automatic stacking of fabric labels. Quickly changed type, type inserts in masterplates, or rotatable typewheels allow imprint changes to be made in seconds. More than 10,000 Markem specialty inks answer virtually any requirement in color, drying speed, adhesion, durability and other special property. And Markem machines provide additional advantages in simple operation quickly learned by average female help . . . long, trouble-free performance without breakdowns . . . flexibility that permits one machine to do several marking jobs.

For labels that look better yet cost you less — to speed identification and help build sales of your product — find out what Markem equipment can do for you. For product, part and package identification and decoration where *direct marking* is preferable to labeling, similar advantages are also available from many other Markem machines. Send your complete marking requirements to Markem Machine Company, Keene 33, N. H.

MARKEM

EVERYTHING INDUSTRY NEEDS . . . FOR PROFITABLE MARKING . . . SINCE 1911



Just Published!

HOW AND WHERE TO LOOK IT UP

A Guide to Standard Sources Of Information

By ROBERT W. MURPHEY

Here at last is a reference volume that makes research quick, easy, and efficient in any office, for businessmen, researchers, advertising men, and secretaries. Heavily cross-referenced and indexed.

As easy to use as a dictionary, this all-inclusive guide lists over 3,900 reference sources, annotated and indexed in 10,000 analytical subject references. It saves you energy, time, and money, showing you how to get the information you need, where to find it, how to evaluate and use it.

Here are sources for mailing lists; for information on credit ratings, affiliations, and economic analysis. The book also tells how to get information from government departments, services, and publications.

You also find commercial, trade, organization, and foreign information sources, plus how to locate photos, films, film strips, slides, etc. 736 pages 6½ x 9¾, \$15.00

16 big time-saving sections!

- | | |
|---------------------|--------------------------|
| 1. Facts | 10. Directories |
| 2. Reference Works | 11. Governmental Sources |
| 3. Libraries | 12. Other Sources |
| 4. Research | 13. Graphic Information |
| 5. Encyclopedias | 14. People |
| 6. Annals, Almanacs | 15. Places |
| 7. Words | 16. Things |
| 8. Periodicals | |
| 9. Books | |

TEN DAYS FREE TRIAL • SEND COUPON

McGraw-Hill Book Co., Dept. BW-9-27
327 W. 41st St., New York 36, N. Y.

Send me for 10 days' examination on approval—

HOW AND WHERE TO LOOK IT UP
By Robert W. Murphey

In 10 days I will remit \$15.00, plus few cents for delivery costs, or return book postpaid. (We pay delivery costs if you remit with this coupon—same return privilege.)

(PRINT)

Name

Address

City Zone State

Company

Position

For price and terms outside U.S. BW-9-27

write McGraw-Hill Int'l., NYC 36, NY



METRO-MITE is International Harvester's entry in race for small truck market.

Light Load Truck

New 3,800-lb. model is designed for multi-stop use, and for transporting light but space-consuming loads.

International Harvester Co. this week started production of a new line of small multi-stop delivery trucks (picture) with deliveries starting in about 30 days.

Called the Metro-Mite, the vehicle apparently is taking dead aim at the market that Volkswagen has been carving out for itself among bakers, florists, dry cleaners, and others who haul light but space-consuming loads. In the past year and a half, Volkswagen has moved up from practically nothing to the number four spot right behind I-H, in trucks weighing under 6,000 lb. (BW—Aug. 16 '58, p. 105).

• **Assets**—The new I-H model sells for \$2,050 f.o.b. Bridgeport, Conn., is rated at 3,800 lb. gross weight with a payload capacity of 1,000 lb. It's powered by a 51-hp. four-cylinder engine. VW's cheapest truck model sells for \$1,845, p.o.c. New York.

Prior to its Metro-Mite entry, I-H was tapping the light delivery truck market with its bigger brother, the Metro standup drive type.

Ralph M. Buzard, vice-president of the Motor Truck Div. for International Harvester, won't admit that the Mite is trying to steal Volkswagen's thunder, but says: "We're aiming at a market in which present half-ton trucks are too large, including our own. It seems silly to use a 4,000-lb. truck for 800-900-lb. payload." **END**

clues:

To The Solution of Management Men's Problems

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication.

Send to office nearest you.

NEW YORK 36: P. O. BOX 12

CHICAGO 11: 520 N. Michigan Ave.

SAN FRANCISCO 4: 68 Post St.

SPECIAL SERVICES

Increase Your Prestige Through Authorship! Exciting, profitable things can happen to the man or company whose book is published under our plan. For free brochures, write Sy Weiss, Exposition Press, 386 4th Ave., N.Y. 16.

67 New Accounts for one company, directly from our entertaining sales magazines. Cost, under \$100 monthly. Exclusive. Write (business letterhead) for facts, sample. Radstone Publications, 4200 W. Burbank Blvd., Burbank, Calif.

BUSINESS OPPORTUNITIES

Free Catalog. Contains hundreds of businesses, farms and income properties throughout U.S., Canada. Specify type and location desired. Deal direct with owners, U.I. Buyers Digest, 1608 Hillhurst, Dept. BW-7, Los Angeles 27, Calif.

Merger Possibilities and companies for sale. Our current list available. Established 1868. Eisele & King, Libraire, Stout & Co., 50 Broadway, New York 4, N. Y.

Est. Chicago-area industrial supplies. Clean. Corner loc. in valuable Goose Island Waterway Area. Owner ret. age. \$42,500 plus lease. BO-8963, Business Week.

\$30,000 to \$50,000 Annual Earning Potential. Exclusive franchises being awarded in many localities to men with specialty sales knowledge. Set up and administer own direct-to-consumer sales organization. Can show many highly successful operations. Unique product and program. Complete factory training given men who qualify. Minimum operating capital required; very high profit ratio to investment. Include qualifications and phone number in response. Write: Dept. BW-10, P.O. Box 769, Santa Monica, Calif.

GIFTS

Select-A-Gift (r) solves Christmas gift problems. Permits the recipient to select his own gift—merchandise or magazines—from Selector Booklets. Only you know the price (from \$2 to \$150). Service includes greeting card custom-printed with your name, packaging and mailing. Satisfaction of donor as well as recipient guaranteed. Free Samples. Write Select-A-Gift, Box 2070, Birmingham, Ala.

BOOKS AND PERIODICALS

Unusually accurate forecasts of business stress mathematical model of profits instead of GNP, income, etc. (High profits spur activity, disappointing profits cue retrenchment.) Subscribers include top corporations, economists. 3 month trial for \$10. (Regularly \$50 per year) Industry Forecast, Box 26, Chappaqua, New York.

CAPITAL TO INVEST

Commercial and Real Estate Financing. 1st & 2nd Mortgages, Construction Loans, Chattel Loans on Machinery, Equipment, Fixtures & Inventory, Sale & Leaseback, Present Financing Consolidated and increased. Payments Reduced, Receivable Discounting, Re-Discounting and Installment Financing, Long-Term Subordinated Note and Debenture Financing, New Ventures Financed, Promotional Financing, U. S. & Canada, Sy Field Co., 1457 Broadway, New York, N. Y. WI 7-7395.

clues

are business opportunity advertising in
BUSINESS WEEK

ADVERTISERS IN THIS ISSUE

Index for Business Week September 27, 1958

AIR EXPRESS DIV. OF RAILWAY EXPRESS AGENCY, INC.117 Agency—Burke Dowling Adams, Inc.	GENERAL MOTORS CORP. (ELECTRO-MOTIVE DIV.)32-33 Agency—Marsteller, Rickard, Gebhardt & Reed, Inc.	SCOVILL MFG. CO.8 Agency—Needham, Louis & Brorby, Inc.
ALLEN-BRADLEY CO.49 Agency—The Fensholt Adv. Agency, Inc.	GEORGIA DEPT. OF COMMERCE112 Agency—Eastburn & Siegel	SHARON STEEL CORP.148 Agency—Duffy, McClure & Wilder, Inc.
ALLIED CHEMICAL CORP. (NAT. ANILINE DIV.)113 Agency—James J. McMahon, Inc.	B. F. GOODRICH INDUSTRIAL PRODUCTS CO.3 Agency—The Griswold-Eshleman Co.	SHAW-BARTON179 Agency—Hayless-Kerr Co.
ALLIS-CHALMERS MFG. CO.160 Agency—Compton Adv., Inc.	GOODRICH-GULF CHEMICALS, INC.91 Agency—The Griswold-Eshleman Co.	SHELL CHEMICAL CORP.2nd Cover Agency—J. Walter Thompson Co.
ALL-STEEL EQUIPMENT, INC.94 Agency—R. R. Hollingsworth & Assoc.	GRAND CENTRAL INDUSTRIAL CENTRE173 Agency—Campbell-Ewald Co.	SIMPLEX WIRE & CABLE CO.161 Agency—Henry A. Loudon Adv., Inc.
ALUMINUM CO. OF AMERICA135 Agency—Fuller & Smith & Ross, Inc.	GREAT LAKES STEEL CORP.22-23 Agency—Campbell-Ewald Co.	FOSTER D. SNELL, INC.162 Agency—St. Georges & Keyes, Inc.
AMERICAN BOSCH ARMA CORP.143 Agency—Doyle, Kitchen & McCormick, Inc.	GUARANTY TRUST CO. OF NEW YORK57 Agency—Albert Frank-Guenther Law, Inc.	SOUNDScriber CORP.19 Agency—Fuller & Smith & Ross, Inc.
AMERICAN EXPRESS CO.25 Agency—Benton & Bowles, Inc.	HALOID XEROX INC.131 Agency—Hutchins Adv. Co., Inc.	SQUARE D CO.28-29 Agency—Beltsche, Meyer & Finn, Inc.
AMERICAN EXPRESS CO.118 Agency—Kelly, Nason, Inc.	HAMMERMILL PAPER CO.130 Agency—Batten, Barton, Durstine & Osborn, Inc.	STANDARD INSTRUMENT CORP.173 Agency—Richard-Lewis Corp.
AMERICAN-SAINT GOBAIN CORP.10-11 Agency—W. S. Walker Adv., Inc.	HOOVER BALL & BEARING CO.110 Agency—The Fred M. Randall Co.	STONE & WEBSTER, INC.142 Agency—Doremus & Co.
AMERICAN TELEPHONE & TELEGRAPH CO.124 Agency—Cunningham & Walsh, Inc.	HUGHES AIRCRAFT CO.12-13 Agency—Foots, Cone & Reiding	STRAN-STEEL CORP. (UNIT OF NAT'L STEEL CORP.)114 Agency—Campbell-Ewald Co.
AMERICAN TELEPHONE & TELEGRAPH CO.7 Agency—N. W. Ayer & Son, Inc.	INTERNATIONAL MINERALS & CHEMICAL CORP.128 Agency—Compton Adv., Inc.	STROMBERG-CARLSON158 Agency—The Humrill Co., Inc.
ANACONDA WIRE & CABLE CO.120 Agency—Kenyon & Eckhardt, Inc.	INTERNATIONAL NICKEL CO., INC.51 Agency—Marshall & Pratt Div. of McCann-Erickson, Inc.	SUPERIOR TUBE CO.173 Agency—Gray & Rogers
ANCHOR POST PRODUCTS, INC. (FENCE DIV.)179 Agency—VanSant, Dugdale & Co., Inc.	INTERNATIONAL TELEPHONE & TELEGRAPH CORP.165 Agency—J. M. Mathes, Inc.	SYLVANIA ELECTRIC PRODUCTS, INC.20-21 Agency—J. Walter Thompson Co.
BANK OF AMERICA71 Agency—Johnson & Lewis, Inc.	IOWA DEVELOPMENT COMM.144 Agency—L. W. Hamer	G. H. TENNANT CO.80 Agency—Collie & McVoy
BRADLEY WASHFOUNTAIN CO.168 Agency—Kirkkasser-Drew Adv.	JOHNS-MANVILLE CORP.188 Agency—J. Walter Thompson Co.	TRAVELERS INSURANCE CO.81 Agency—Young & Rubicam, Inc.
BROWN BOVERI CORP.119 Agency—Corbin Adv. Agency	JOMAC, INC.118 Agency—Gray & Rogers	TUBE METHODS, INC.157 Agency—John Miller
CHARLES BRUNING CO., INC.164 Agency—H. W. Kaster & Sons Adv. Co., Inc.	JONES & LAMSON MACHINE CO.53 Agency—Henry A. Loudon Adv., Inc.	UNITED STATES RUBBER CO.79 Agency—Fletcher D. Richards, Inc.
BUFFALO PUMPS63 Agency—Melvin F. Hall Adv. Agency, Inc.	KIDDER-PEABODY & CO.175 Agency—Doremus & Co.	UNIVERSAL OIL PRODUCTS CO.163 Agency—Tobias, O'Neil & Galloway, Inc.
BURROUGHS CORP.4th Cover Agency—Campbell-Ewald Co.	LESTER B. KNIGHT & ASSOC.115 Agency—J. R. Pershall & Co.	WAGNER ELECTRIC CORP.26 Agency—Arthur R. Mogge, Inc.
CAPITOL PRODUCTS CORP.109 Agency—The Altink-Kynett Co., Inc.	MACK TRUCKS, INC.82-83 Agency—Doyle, Kitchen & McCormick, Inc.	WAUSAU PAPER MILLS CO.159 Agency—Waldie & Briggs, Inc.
THE CHASE MANHATTAN BANK86 Agency—Kenyon & Eckhardt, Inc.	P. R. MALLORY & CO., INC.169 Agency—The Altink-Kynett Co., Inc.	WEST PENN ELECTRIC SYSTEM157 Agency—Albert Frank-Guenther Law, Inc.
CHEMSTRAND CORP.62 Agency—Doyle Dane Bernbach, Inc.	MALLORY-SHARON METALS CORP.176 Agency—The Griswold-Eshleman Co.	WESTERN MARYLAND RAILWAY CO.132 Agency—Marshall & Pratt Div. of McCann-Erickson, Inc.
CHRYSLER CORP., AIRTEMP DIV.87 Agency—Grant Adv., Inc.	THE B. L. MARBLE CHAIR CO.119 Agency—Carr Liggett Adv., Inc.	WHEATON VAN LINES, INC.78 Agency—Poonman, Butler & Assoc., Inc.
C.I.T. CORP.154 Agency—Fuller & Smith & Ross, Inc.	MARKEM MACHINE CO.181 Agency—Culver Adv., Inc.	S. S. WHITE DENTAL MFG. CO.152 Agency—Hazard Adv. Co., Inc.
THE CITY OF LONG BEACH153 Agency—Patch & Curtis Adv. Agency, Inc.	MARSHALL & STEVENS, INC.64 Agency—Gerth, Brown, Clark & Elkus of Los Angeles, Inc.	WORCESTER PRESSED STEEL CO.78 Agency—John C. Dowd, Inc.
CLUES (CLASSIFIED ADVERTISING)182	McGRAW-HILL BOOK CO., INC.182	WORTHINGTON CORP.16-17 Agency—Needham, Louis & Brorby, Inc.
COLUMBIA-SOUTHERN CHEMICAL CORP.14-15 Agency—Ketchum, MacLeod & Grose, Inc.	McGRAW-HILL MINING PUBLICATIONS98-99	YUBA CONSOLIDATED INDUSTRIES66-67 Agency—Harris, Harlan, Wood
CONTINENTAL MOTORS CORP.108 Agency—The Hopkins Agency	McGRAW-HILL PUBLISHING CO., INC.170-171	ZIFF DAVIS PUBLISHING CO.114 Agency—Galbraith-Hoffman
CONVAIR, DIV. OF GENERAL DYNAMICS CORP.3rd Cover Agency—Burke Dowling Adams, Inc.	MEILINK STEEL SAFE CO.157 Agency—Blum Adv. Agency	ZIPPO MFG. CO.27 Agency—Ogilvy, Benson & Mather, Inc.
CORRY-JAMESTOWN STEEL CORP.34 Agency—W. S. Walker Adv., Inc.	MINNESOTA MINING & MFG. CO.56-59 Agency—Batten, Barton, Durstine & Osborn, Inc.	
CUNNINGHAM & WALSH, INC.134 Agency—Cunningham & Walsh, Inc.	MINNESOTA MINING & MFG. CO.102-103 Agency—MacManus, John & Adams, Inc.	
DADE COUNTY DEV. DEPT.179 Agency—Charles W. Hoyt Co., Inc.	P. O. MOORE, INC.118 Agency—Lee Ramsdell & Co., Inc.	
H. DAROFF & SONS, INC.18 Agency—Alfred J. Silberstein, Bert Goldsmith, Inc.	MORGAN STANLEY & CO.142 Agency—Doremus & Co.	
DEERE & CO.116 Agency—Klan-Van Pietersom-Dunlap, Inc.	MOSLER SAFE CO.136 Agency—Cunningham & Walsh, Inc.	
DELTA AIR LINES180 Agency—Burke Dowling Adams, Inc.	MOTOROLA COMMUNICATIONS & ELECTRONICS, INC.84-85 Agency—Kolb & Abraham, Inc.	
DILLON, REID & CO.144 Agency—Doremus & Co.	NATIONAL HOMES CORP.61 Agency—Tatham, Leavelle, Inc.	
E. I. DUPONT DE NEMOURS & CO.151 Agency—Batten, Barton, Durstine & Osborn, Inc.	NATIONAL TOOL & DIE MFRS. ASSN.72 Agency—Fred Wittmer Adv.	
EASTMAN KODAK CO.37 Agency—J. Walter Thompson Co.	NEPTUNE METER CO.104 Agency—W. L. Torne	
EMERY AIR FREIGHT CORP.137 Agency—J. M. Mathes, Inc.	NIAGARA MOHAWK POWER CORP.38 Agency—Batten, Barton, Durstine & Osborn, Inc.	
EMHART MFG. CO.148 Agency—The Charles Brunelle Co.	PAN AMERICAN WORLD AIRLINES127 Agency—Kuhnert Agency, Inc.	
THE FIRST NATIONAL BANK OF MIAMI180 Agency—Tally Embury, Inc.	POTTER & JOHNSTON CO.147 Agency—Hugh H. Graham & Assoc., Inc.	
FLORIDA IND. DEV. COMM.30-31 Agency—Grant Adv., Inc.	J. F. PRITCHARD & CO.24 Agency—Aubrey, Finlay, Marley & Hodgson, Inc.	
FORD MOTOR CO.140 Agency—J. Walter Thompson Co.	REPUBLIC AVIATION CORP.68 Agency—DeGarmo, Inc.	
FORT WAYNE CORRUGATED PAPER CO.4 Agency—Doremus & Co.	REULAND ELECTRIC CO.6 Agency—Van der Boom Hunt McNaughton, Inc.	
FRICK CO.134 Agency—Waxenboro Adv. Agency	ROYAL MOORE CORP.54 Agency—Young & Rubicam, Inc.	
GARDNER-DENVER CO.9 Agency—The Buchen Co.	SAGINAW STEERING GEAR DIV., GENERAL MOTORS CORP.122 Agency—D. P. Brother & Co.	
GAYLORD CONTAINER CORP., DIV. OF CROWN ZELLERBACH CORP.165 Agency—Freuch & Shields, Inc.	SAN JOSE CHAMBER OF COMMERCE64 Agency—Long Adv., Inc.	

ADVERTISING SALES STAFF

Midwestern Advertising Sales Manager John P. Taylor—Chicago	Eastern Advertising Sales Manager C. C. Randolph—New York
Atlanta 3....Douglas C. Hillman, 134 Peachtree St., N. W. Jackson 3-9051	Boston 16....Kent Sanger, Park Square Bldg., Hubbard 2-7160
Chicago 11....Herbert M. Higgins, William F. Holbrook, James E. McShane, Robert Eldred, 520 N. Michigan Ave., Mohawk 4-5800	Cleveland 13....William C. Bradford, John G. Cashin, 55 Public Square, Superior 1-7000
Dallas 2....Gordon L. Jones, Vaughn Bldg., Riverside 7-5117	Denver 2....John W. Patten, Mile High Center, 1740 Broadway, Alpine 5-2281
Detroit 26....G. Robert Griswold, Richard J. McGurk, Penobscot Bldg., Woodward 2-1793	Los Angeles 17....Alfred L. Blessing, 1125 West Sixth St., Huntley 2-5450
New York 36....Harold E. Choate, Fred R. Emerson, John H. Glover, John F. Jurasek, Francis F. McAdams, A. T. O'Neil, John H. Stevenson, 500 5th Ave., Oxford 5-5959	Philadelphia 3....R. Bernard Alexander, David S. Conner, Six Penn Center Plaza, Locust 8-4320
Pittsburgh 22....John R. Thomas, Oliver Bldg., Atlantic 1-4705	St. Louis 8....John F. Roemer, Continental Bldg., 3615 Olive St., Jefferson 5-4867
San Francisco 4....John W. Otterson, 68 Post St., Douglas 2-4909	London....Edward E. Schirmer, McGraw-Hill House, 95 Farringdon St., London, E. C. 4
Frankfurt....Michael R. Zeynel, Ann Leinhardt-brunn 12 Frankfurt/Main, Germany	

The New Trend in Wage Bargaining

Employers have been saying for years that inflationary wage bargaining must be stopped. But year after year, they found themselves negotiating settlements less on a basis of what would be best for their company and the economy than of what price had to be paid their union for labor peace. As often as not, sheer union power dictated this.

Ten years ago, General Electric adopted a negotiating policy that is commonly called by the name of a GE vice-president, Lemuel Boulware.

Under it, GE makes a single offer that it considers "fully right by every reasonable standard." Subject to "modifications . . . indicated as right by any new light on the subject from any source," this becomes the only basis for GE bargaining. The company will take a strike rather than give more or engage in what it calls "horse trading" over terms. For a decade, this policy has led to peaceful settlements on GE's offers—despite perennial union denunciations.

Few other major employers have adopted "Boulwarism" as a bargaining policy. Many disagree with it. They say that what will work for GE with its many unions will not necessarily work for others, which bargain with one or a few strong unions.

Nevertheless, the idea of taking a strong and reasonable bargaining position—and sticking to it—is spreading (page 39).

Two years ago, the steel industry changed its tactics against the United Steelworkers. A bargaining policy the union called "Boulwarism"—but which wasn't, by GE standards—brought a three-year contract on terms based on those initially offered by major employers, as fair for everybody.

Now, in the auto industry, negotiators bargaining for the industry, with common interests in mind, have settled with the United Auto Workers largely on a basis of an offer carefully worked out in advance, with employer and employee considerations in mind, and then staunchly and aggressively pressed in bargaining.

To Ford, what resulted is a "non-inflationary" settlement, one that is "non-excessive but ample." It gives employees a "fair" projection of 1955-58 contract terms for three more years, and tops this with a few new but moderate concessions.

Although auto labor costs will be higher under the settlement, the terms are probably the cheapest in more than a decade.

It's possible that the auto makers could have driven a harder bargain, the times being what they are. But long-term relations would have been at stake. As it is, the industry's tough bargaining—and victory—will hardly hurt existing employee relations.

The auto makers' "non-inflationary" bargaining

policy might not have worked in a year with a booming economy or for a company or industry more vulnerable at this time to a union's strike weapon. But the important thing is this: First in electrical manufacturing and then in steel and now auto manufacturing, employers have demonstrated that management can take a well-prepared and fair line in bargaining, defend it aggressively, and win.

The Idea of "Perfectibility"

Nothing about America has so astonished other nations—or has been so frequently satirized by them—as our willingness to junk the almost new to adopt the brand-new. In his classic *Democracy in America*, published in 1835, Alexis de Tocqueville noted: "I accost an American sailor and inquire why the ships of his country are built so as to last for only a short time; he answers without hesitation that the art of navigation is every day making such rapid progress that the finest vessel would become almost useless if it lasted beyond a few years. In these words, which fell accidentally, and on a particular subject, from an uninstructed man, I recognize the general and systematic idea upon which a great people direct all their concerns."

This willingness—even eagerness—to scrap something perfectly good in order to get something better has kept the U.S. from falling victim to its own success. For you can see in history a law of industrial development that we might call the "first in, first out" principle—that is, that the nation (or region) that first develops a complex technology and industrial plant may be the first to fall behind, as other nations and regions benefit by its gains—and by more recent developments in science and technology—and surge ahead of it. Only a process of continuous change can prevent the very successes of the past from choking off a nation's industrial progress.

Industrial progress comes naturally during a period of rapid expansion. But it's a lot tougher to achieve when industries are not striving for extra capacity. That's why—after the great expansion wave of American industry during the postwar years has carried us beyond our immediate capacity requirements—the McGraw-Hill publications are exploring the problems and opportunities of modernization in a series of special studies (pages 74-126).

With other nations moving ahead fast—not just the Russians, but the Germans and many others—this is no time for Americans to slip from the creed that made this nation great—the creed that de Tocqueville called "the idea of indefinite perfectibility."



STRATEGIC AIR COMMAND... *a force for peace!*



A force for peace—a firm hand in the sky clutching a bolt of lightning and an olive branch! This is the insignia of the Strategic Air Command. The United States Air Force, through S.A.C., is historically and by technical know-how best organized, equipped and trained to carry out our strategic mission—to deter war—to insure continuing world peace!

PUBLISHED AS A PUBLIC SERVICE BY CONVAIR A DIVISION OF GENERAL DYNAMICS CORPORATION



WILDROOT COMPANY processes 50% more volume at 50% less cost with Burroughs Accounting Machines

It's a rare drug, cosmetic, grocery or variety counter you shop today without coming face to face with famous Wildroot Cream Oil packages. And its very success has confronted The Wildroot Company with outsize accounting problems—which the firm now takes in stride with Burroughs Typing Sensimatic Accounting Machines.

Wildroot recently installed three of these machines, which now make short work of accounts receivable, posting

to the ledger and cycle-billing of delinquent accounts.

"Our Burroughs Typing Sensimatic Accounting Machines process 50% more volume with a corresponding 50% decrease in costs," declares E. J. Pempsell, Wildroot comptroller. "With their built-in speed, flexibility and accuracy, even our biggest peak loads of accounting are swiftly, surely cut down to size. Our operators are most enthusiastic about the equipment."

From accounting machines to the most advanced of electronic computers, Burroughs has the fullest range of data processing equipment and systems for every need of management in whatever size or type of business. Machines that faithfully deliver up-to-the-instant figure-facts about every phase of your business at all times.

Demonstration? Just call our local office. Or write Burroughs Corporation, Burroughs Division, Detroit 32, Mich.

Burroughs—TM.



Burroughs Corporation

"NEW DIMENSIONS" in electronics and data processing systems